

ACADEMIC AFFAIRS OFFICE
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
Roorkee – 247667

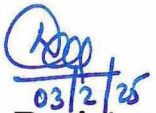
No. Acd./7668/Senate-103

Dated: February 03, 2025

Head, Department of Design

Subject: Revision in programme structure of Bachelor of Design (B.Des.) (Item No. 103.6)

The Senate, in its 103rd meeting held on 19.12.2024, has approved the revised programme structure of Bachelor of Design (B.Des). The approved programme structure is attached as **Appendix-A**.


03/2/25
Assistant Registrar
(Curriculum)

Encl. Appendix-A

Copy to (through e-mail):-

1. Chairman, Senate & Director
2. All faculty
3. Dean, Academic Affairs
4. Chairperson DAPC, Department of Design
5. ADoAA (IT Systems & Admission)/ (Curriculum)/ (Evaluation)
6. Deputy Registrar, Academic Affairs Office
7. Assistant Registrar (IT Systems & Admission)/ (Evaluation)
8. Meeting Section
9. Channel i/ Academic webpage of iitr.ac.in

Revised Structure of the B. Des. Programme

Main Curriculum Components	Sub Components	Approved Credits for B. Tech.	Approved Credits Range	Existing Credits for B. Des. Structure	Existing Credits Range for B. Des. Structure	Proposed Credits for Revised B. Des. Structure	Proposed Credits Range for Revised B. Des. Structure
Institute Core Course -17-	HSSC	5	52-58	5	57	5	49
	HSSEC	6		6		6	
	MC	3		3		3	
	BSC	12-20		16		16 (Three Courses have been modified as Mathematics for Designers, Science for Designers and Statistical Techniques for Designers)	
	ESC	8-20		16		8 (Three courses i.e. Engineering Mechanics, Basic Electrical Engineering and Fundamental of Electronics have been removed and the course Manufacturing Processes has been added)	
	DSC	4		4		4	
	ESSC	3		3		3	
	TM	4		4		4	
Programme Core Course	CCCC	40-48	87-91	43	89	47 (4 Credits have been added, within limit of CCCC)	95
	AI/ML	2		2		2	
	Engg. Analysis and design (design thinking-based project)/Industry Oriented Problem Solving/Lab based Project/Practical Problem/Case study	4		4		4	
	Technical Communication	2		2		2	
	BTP/Entrepreneurship/Project-based internship/PEC	6-10		10		12 (2 Credits have been added)	
	PEC	22-26		22		22	
	TEB	6-8		6		6	
Other Courses	OEC	9-12	9-12	9-12	9-12	9-12	9-12
	CORE	2	2	2	2	2	2
	Total	150-160	150-160	157-160		155-158	
	MSC/DHC	18-20		18-20	18-20	18-20	18-20
	Grand Total			175-180		173-178	

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DEPARTMENT OF DESIGN
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Programme Code	:	XXX	B. Des.	
Department	:	DOD	Department of Design	
Teaching Scheme				
Year		Credits in Autumn Semester	Credits in Spring Semester	Credits (Year – wise)
1		20	20	40
2		23/24	23/24	46/48
3		21/22	20	41/42
4		16	12	28
Total				155-158
Grand Total with MSC/DHC		With addition 18-20 credits		173-178

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Non-Credit Elements	Components	Maximum Units	Minimum Units	Comments
(NCE)	Discipline (DIS)	16	8	To be evaluated by DoSW
	NCC/NSS/NSO	8	4	To be evaluated by DoSW
	Internship (INT)	24	8	1-week internship= 1 unit (to be coordinated by the deptt. /Centres/School)
	Participation in professional development programs by Industry experts/ field experts (PPD-1 & PPD-2)	8	4	To be coordinated by the departments/Centres/school (2nd& 3rd Years)
Minimum non-credit units to be earned: 24				

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COLOR	REMARKS
	Courses shifted between semesters
	New Courses added / Modified courses (existing courses)

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DEPARTMENT OF DESIGN

Programme Code : XXX B. Des.
 Department : DOD Department of Design
 Year : I

Teaching Scheme					Contact Hours/ Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1	HSI-101	Soft Skills	HSSC	3	2	0	2	2	0	10-25	25	20-30	30-40	-
2	DEB-101	Mathematics for Designers	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3	DEB-103	Science for Designers	BSC	4	2	1	2	2	0	10-25	25	15-25	30-40	-
4	TMI-102	Tinkering and Mentoring	TMI	2	-	-	-	-	2	60	40	-	-	-
	TMI-103	Basics of IP and Entrepreneurship		2	2	0	0	2	0	50	-	-	50	-
*5	DEC-101	Introduction to Design	PCC	2	1	0	2	2	0	10-25	25	15-25	30-40	-
*6	DEC-103	Elements and Principles of Design	PCC	3	1	0	4	-	-	10-25	25	15-25	-	30-40
Total				20										
(Spring)														
1	IKS-102	Indian Knowledge System	HSSC	2	2	0	0	2	0	20-35	-	20-30	40-50	-
2	DEB-102	Statistical Techniques for Designers	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3	DEC-102	Design Methodology	PCC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
4	ESS-104	Environmental Science and Sustainability	ESSC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
5	DEC-104	Sketching and Form Exploration	PCC	4	2	0	4	2	0	15-30	20	15-25	30-40	-
**6	DEC-106	Basic Programming for Designers	PCC	4	2	0	4	2	0	15-30	20	15-25	30-40	-
Total				20										

*The current B. Des. batch (registered in 2024-25) are yet to complete these courses (Sr. No. 5 & 6 in the first-year Autumn semester 2024-25). The current batch be allowed to register these two courses in the spring semester 2024-25.

**The current B. Des. batch (registered in 2024-25) has already completed this course (Sr. No. 6 in the first-year Autumn semester 2024-25). Therefore, the students of this batch, who have got pass grade in the course be exempted from registering in this course in the spring semester 2024-25.

DEPARTMENT OF DESIGN

Programme Code : XXX B. Des.
 Department : DOD Department of Design
 Year : II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1	OEC-I	Open Elective Course-I	OEC	3/4										
2	DEC-201	Data Science for Designers	DSC	4	2	0	4	2	0	15-30	20	15-25	30-40	-
3	MTE-103	Material Science	ESC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	MSI-101	Fundamentals of Management	MC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
5	DEC-203	Visual Representation	PCC	3	1	0	4	-	-	10-25	25	20-30	-	30-40
6	DEC-205	Engineering Drawing	PCC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
7	DEC-207	Visual Communication (Design Studio)	PCC	3	1	0	4	-	-	10-25	25	15-25	-	30-40
		Total		23/24										
(Spring)														
1	OEC-II	Open Elective Course-II	OEC	3/4										
2	HSSEC-I	HSS Elective Course	HSSEC	3										
3	MIE-102	Manufacturing Processes	ESC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	BEB -102	Biosciences for Engineers	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5	DEC-202	Introduction to Ergonomics	PCC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
6	DEC-204	History and Contemporary Design	PCC	2	2	0	0	2	0	20-35	-	20-30	40-50	-
7	DEC-206	Cognition and Emotion in Creative Design	PCC	2	1	0	2	2	0	10-25	25	15-25	30-40	-
8	DET-I	Talent Enhancement Course-I	TEB	2										
		Total		23/24										

DEPARTMENT OF DESIGN

Programme Code : XXX B. Des.
 Department : DOD Department of Design
 Year : III

S. No.	Teaching Scheme				Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1	OEC-III	Open Elective Course-III	OEC	3/4										
2	DEC-351	Fundamentals of AI/ML	PCC	2	1	0	2	2	0	10-25	25	15-25	30-40	-
3	DEC-301	User Interaction Design	PCC	3	1	0	4	-	-	-	40-60	20-30	-	20-30
4	DEC-303	Product Modeling and Simulation	PCC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
5	DEC-391	Design Communication	PCC	2	0	2	0	-	-	100				
6	DEC-305	Prototyping (Design Studio)	PCC	4	0	0	8	-	-	-	30-50	-	-	40-60
7	DEC-399	Community Outreach	CORE	2	0	0	4	-	-	100				
8	DET-II	Talent Enhancement Course-II	TEB	2										
		Total		21/22										
(Spring)														
1	HSSEC-II	HSS Elective Course	HSSEC	3										
2	DEC-302	User Experience Design	PCC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
3	DEC-304	Product Innovation Management and IPR	PCC	2	2	0	0	2	0	20-35	-	20-30	40-50	-
4	DEC-300	Practical Problem Solving (Design Studio)	PCC	4	0	0	8	-	-	100				
5	DEL-I	Program Elective Course-I	PEC	3										
6	DEL-II	Program Elective Course-11	PEC	3										
7	DET-III	Talent Enhancement Course-III	TEB	2										
8	MSC/DHC-I	Minor Specialization Course-I / Departmental Honors Course-I	MSC/DHC	3/4										
		Total		20/23-24										

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DEPARTMENT OF DESIGN

Programme Code : XXX B. Des.
 Department : DOD Department of Design
 Year : IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1	DEL-III	Program Elective Course-III	PEC	4										
2	DEL-IV	Program Elective Course-IV	PEC	4										
3	DEL-V	Program Elective Course-V	PEC	4										
4	DEL-VI	Program Elective Course-VI	PEC	4										
5	MSC/DHC-II	Minor Specialization Course-II / Departmental Honors Course-H	MSC/ DHC	3/4										
6	MSC/DHC-III	Minor Specialization Course-III / Departmental Honors Course-III	MSC/ DHC	3/4										
		Total		16/22-24										
(Spring)														
1	DEP-400	Design Project (Phase-II)	PCC	12	-	-	-	-	-				100	
2	MSC/DHC-IV	Minor Specialization Course-IV / Departmental Honors Course-IV	MSC/ DHC	3/4										
3	MSC/DHC-V	Minor Specialization Course-V / Departmental Honors Course-V	MSC/ DHC	3/4										
		Total		12/18-20										

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DEPARTMENT OF DESIGN

List of Program Elective Courses

S. No.	Teaching Scheme				Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	DEL-301	Typography	PEC	3	2	1	0	3	0	20-35	-	20-30	40-50	-
2.	DEL-302	Design for Excellence	PEC	3	2	1	0	3	0	20-35	-	20-30	40-50	-
3.	DEL-303	Design Storytelling and Narratives	PEC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
4.	DEL-401	Frugal Product and Process Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5.	DEL-402	Value Engineering in Product Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
6.	DEL-403	Strategic Design Thinking for Concentric Innovation	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
7.	DEL-404	Design and Society	PEC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
8.	DEL-405	Universal Design for Digital Accessibility	PEC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
9.	DEL-406	Inclusive Design Systems	PEC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
10.	DEL-407	Design Thinking for Digital Media	PEC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
11.	DEL-408	Design Futures	PEC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
12.	DEL-409	Art and Craft Studies	PEC	4	2	0	4	2	0	15-30	20	15-25	30-40	-
13.	DEL-410	Design Thinking for Complex Societal Challenges	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
14.	DEL-411	Innovation and Market Development for Value Networks	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-

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DEPARTMENT OF DESIGN

List of Department Honors Courses

S. No.	Course Code	Teaching Scheme			Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
		Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	DEL-301	Typography	DHC	3	2	1	0	3	0	20-35	-	20-30	40-50	-
2.	DEL-302	Design for Excellence	DHC	3	2	1	0	3	0	20-35	-	20-30	40-50	-
3.	DEL-303	Design Storytelling and Narratives	DHC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
4.	DEL-401	Frugal Product and Process Design	DHC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5.	DEL-402	Value Engineering in Product Design	DHC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
6.	DEL-403	Strategic Design Thinking for Concentric Innovation	DHC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
7.	DEL-404	Design and Society	DHC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
8.	DEL-405	Universal Design for Digital Accessibility	DHC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
9.	DEL-406	Inclusive Design Systems	DHC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
10.	DEL-407	Design Thinking for Digital Media	DHC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
11.	DEL-408	Design Futures	DHC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
12.	DEL-409	Art and Craft Studies	DHC	4	2	0	4	2	0	15-30	20	15-25	30-40	-
13.	DEL-410	Design Thinking for Complex Societal Challenges	DHC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
14.	DEL-411	Innovation and Market Development for Value Networks	DHC	4	3	1	0	3	0	20-35	-	20-30	40-50	-

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List of Minor Specialization Courses

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S. No.	Course Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	DEC-102	Design Methodology	MSC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
2.	DEC-203	Visual Representation	MSC	3	1	0	4	-	-	10-25	25	20-30	-	30-40
3.	DEC-207	Visual Communication (Design Studio)	MSC	3	1	0	4	-	-	10-25	25	15-25	-	30-40
4.	DEC-204	History and Contemporary Design	MSC	2	2	0	0	2	0	20-35	-	20-30	40-50	-
5.	DEC-202	Introduction to Ergonomics	MSC	3	1	0	4	2	0	10-25	25	15-25	30-40	-
6.	DEC-301	User Interaction Design	MSC	3	1	0	4	-	-	-	40-60	20-30	-	20-30
7.	DEC-302	User Experience Design	MSC	3	1	0	4	2	0	10-25	25	15-25	30-40	-

DEPARTMENT OF DESIGN

TALENT ENHANCEMENT COURSES

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S. No.	Course Code	Course Title	Sub. Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
TEB-A (DESIGN)														
1	DET-101	Solid Modelling	TEB	2	0	0	4	-	-	-	50	-	-	50
2	DET-102	CAE	TEB	2	0	0	4	-	-	-	50	-	-	50
3	DET-103	Design Optimization	TEB	2	0	0	4	-	-	-	50	-	-	50
TEB-B (ADDITIVE MANUFACTURING)														
1	DET-104	Solid Modeling & Reverse Engineering	TEB	2	0	0	4	-	-	-	50	-	-	50
2	DET-105	Data Processing for Additive Manufacturing	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
3	DET-106	Rapid Prototyping	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
TEB-C (INDUSTRIAL AUTOMATION)														
1	DET-107	Introduction to Automation	TEB	2	1	1	0	-	-	20-35	-	20-30	40-50	-
2	DET-108	System Integration	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
3	DET-109	Cloud Computing	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
TEB-D (WELDING ENGINEERING)														
1	DET-110	Design Guidelines for Welding	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
2	DET-111	Advanced Welding Processes	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
3	DET-112	Quality Assurance in Welding	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
TEB-E (COMPUTATIONAL THERMO-FLUIDS)														
1	DET-113	Basics of Computational Thermo-fluids	TEB	2	2	0	0	-	-	20-35	-	20-30	40-50	-
2	DET-114	Thermofluid Simulation Software	TEB	2	0	0	4	-	-	-	50	-	-	50
3	DET-115	Problem-based Learning with Simulation Tools	TEB	2	0	0	4	-	-	-	50	-	-	50

TEB-F (MEASUREMENT IN THERMAL SYSTEMS)														
1	DET-116	Basics of Measurements	TEB	2	2	0	2/2	-	-	15-30	20	15-25	30-40	-
2	DET-117	Data Acquisition and Analysis	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
3	DET-118	Instrumentation and measurement techniques	TEB	2	2	0	2/2	-	-	15-30	20	15-25	30-40	-
TEB-G (FLUID MACHINERY & FLUID POWER)														
1	DET-119	Introduction to Fluid Machines and Fluid Power	TEB	2	2	0	0	-	-	20-35	-	20-30	40-50	-
2	DET-120	Hydrodynamic Machines	TEB	2	2	0	2/2	-	-	15-30	20	15-25	30-40	-
3	DET-121	Fluid Power Systems	TEB	2	2	0	0	-	-	20-35	-	20-30	40-50	-
TEB-H (MATERIALS)														
1	DET-121	Colours and Materials	TEB	2	0	0	4	-	-	-	50	-	-	50
2	DET-122	Materials & Manufacturing	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40
3	DET-123	Materials and Prototyping	TEB	2	1	0	2	-	-	10-25	25	15-25	-	30-40

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