

**ACADEMIC AFFAIRS OFFICE  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

No. Acd./1207/Senate-86

Dated: March 09, 2021

**NOTIFICATION**

**Subject: Structure of M.Des. and MIM (86.13)**

The Senate in its 86<sup>th</sup> meeting held on 09.02.2021 considered and approved the structure of following programmes:

1. M. Des. (Industrial Design) (**Appendix-A**)
2. MIM (Masters in Innovation Management) (**Appendix-B**)



**Assistant Registrar (Curriculum)**

**Copy to (through e-mail):-**

1. Chairman Senate & Director
2. All faculty
3. All Head of Departments/ Centres
4. Dean, Academic Affairs
5. Associate Dean of Academic Affairs (Curriculum)/(Evaluation)
6. Assistant Registrar (Admission)/(Evaluation)
7. Meeting Section
8. Channel I/ Acad portal/ Academic webpage of iitr.ac.in

# PROGRAM STRUCTURES OF THE PROPOSED MASTERS PROGRAMS

(a) M. Des. (Industrial Design)

## Teaching Scheme

Year: Autumn Semester

| Teaching Scheme |             |                                          |              |         | Contact Hrs Per Week |   |    | Exam Duration |   | Relative Weightage % |       |       |       |     |
|-----------------|-------------|------------------------------------------|--------------|---------|----------------------|---|----|---------------|---|----------------------|-------|-------|-------|-----|
| S No.           | Course Code | Course Title                             | Subject Area | Credits | L                    | T | P  | T             | P | CWS                  | PRS   | MTE   | ETE   | PRE |
| 1               | IDN-501**   | Introduction to Design and Prototyping   | PCC          | Audit   | 15                   | 5 | 10 | 02            | - | 35                   | 35    | --    | 30    | --  |
| 2               | IDN-503     | Design Thinking                          | PCC          | 3       | 1                    | 0 | 4  | 2             | 0 | 20-35                | 20-30 | 20-30 | 40-50 | -   |
| 3               | IDN-505     | Elements and Principles of Visual Design | PCC          | 3       | 2                    | 1 | 0  | 2             | 0 | 20-35                | -     | 20-30 | 40-50 | -   |
| 4               | IDN-507     | Human Factor Design                      | PCC          | 3       | 1                    | 2 | 0  | 2             | 0 | 20-35                | -     | 20-30 | 40-50 | -   |
| 5               | IDN-509     | Materials and Manufacturing              | PCC          | 3       | 1                    | 1 | 2  | 2             | 0 | 20-35                | 20-30 | 20-30 | 40-50 | -   |
| 6               | IDN-511     | Effective Communication                  | PCC          | 2       | 1                    | 1 | 0  | 2             | 0 | 20-35                | -     | 20-30 | 40-50 | -   |
| 7               | IDN-513     | Ideation Project                         | PCC          | 4       | 1                    | 0 | 6  | -             | - | -                    | 100   | -     | -     | -   |
| 8               |             | Program Elective I                       | PEC          | 3       | -                    | - | -  | -             | - | -                    | -     | -     | -     | -   |
|                 |             |                                          | Sub Total    | 21      |                      |   |    |               |   |                      |       |       |       |     |

\*\* This is a foundation course which will be running for 7-10 days to give orientation of Design course. It will be held before actual start of the semester teaching.

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# **I Year: Spring Semester**

| Teaching Scheme |             |                           |              |           | Contact Hrs Per Week |   |    | Exam Duration |   | Relative Weightage% |       |       |       |       |
|-----------------|-------------|---------------------------|--------------|-----------|----------------------|---|----|---------------|---|---------------------|-------|-------|-------|-------|
| S No.           | Course Code | Course Title              | Subject Area | Credits   | L                    | T | P  | T             | P | CWS                 | PRS   | MTE   | ETE   | PRE   |
| 1               | IDN-502     | Design Methodology        | PCC          | 3         | 2                    | 0 | 2  | 2             | 0 | 20-35               | 20-30 | 20-30 | 40-50 | -     |
| 2               | IDN-504     | Form Design               | PCC          | 3         | 1                    | 0 | 4  | 0             | 4 | 20-35               | 20-30 | -     | -     | 40-50 |
| 3               | IDN-506     | Design for Sustainability | PCC          | 3         | 2                    | 1 | 0  | 2             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| 4               | IDN-508     | Creation Project          | PCC          | 5         | -                    | - | 10 | -             | - | -                   | 100   | -     | -     | -     |
| 5               | IDN-510     | Design Seminar            | PCC          | 2         | -                    | - | 4  | -             | - | 100                 | -     | -     | -     | -     |
| 6               |             | Program Elective II       | PEC          | 3         | -                    | - | -  | -             | - | 20-35               | -     | 20-30 | 40-50 | -     |
| 7               |             | Program Elective III      | PEC          | 3         | -                    | - | -  | -             | - | 20-35               | -     | 20-30 | 40-50 | -     |
|                 |             |                           |              | Sub Total |                      |   |    |               |   |                     |       |       |       |       |
|                 |             |                           |              | 22        |                      |   |    |               |   |                     |       |       |       |       |

# **II Year: Autumn Semester**

| Teaching Scheme |             |                                                        |              |        | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage% |     |       |       |                   |
|-----------------|-------------|--------------------------------------------------------|--------------|--------|----------------------|---|---|---------------|---|---------------------|-----|-------|-------|-------------------|
| S No.           | Course Code | Course Title                                           | Subject Area | Credit | L                    | T | P | T             | P | CWS                 | PRS | MTE   | ETE   | PRE               |
| 1               | IDN-702     | Internship (Industrial Training/ Project/ Interaction) | SEM          | 4      | -                    | - | - | -             | - | -                   | -   | -     | -     | 100 <sup>ss</sup> |
| 2               |             | Program Elective IV                                    | PEC          | 3      | -                    | - | - | -             | - | 15-35               | -   | 25-35 | 40-50 | -                 |
| 3               |             | Program Elective V*                                    | PEC          | 3      | -                    | - | - | -             | - | -                   | -   | -     | -     | -                 |
| 4               | IDN-701A    | Design Project (Phase – I)                             | DIS          | 5      | -                    | - | - | -             | - | -                   | -   | -     | -     | 100               |
|                 |             |                                                        | Sub Total    | 15     |                      |   |   |               |   |                     |     |       |       |                   |

<sup>ss</sup> Evaluation scheme: (Industry: 40 + Institute: 60) Internship will be completed during summer break.

\*May be completed through online mode (for example, NPTEL).

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## II Year: Spring Semester

| Teaching Scheme |             |                             |              | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage % |     |     |     |     |     |
|-----------------|-------------|-----------------------------|--------------|----------------------|---|---|---------------|---|----------------------|-----|-----|-----|-----|-----|
| S No.           | Course Code | Course Title                | Subject Area | Credit               | L | T | P             | T | P                    | CWS | PRS | MTE | ETE | PRE |
| 1.              | IDN-701 B   | Design Project (Phase – II) | DIS          | 12                   | - | - | -             | - | -                    | -   | -   | -   | -   | 100 |
| Sub Total       |             |                             |              | 12                   |   |   |               |   |                      |     |     |     |     |     |
| Total           |             |                             |              | 70                   |   |   |               |   |                      |     |     |     |     |     |

## Basket of Elective Courses for M. Des. (Industrial Design)

### Basket 1 Engineering Group

| Teaching Scheme        |             |                                          |              | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage % |       |       |       |       |     |
|------------------------|-------------|------------------------------------------|--------------|----------------------|---|---|---------------|---|----------------------|-------|-------|-------|-------|-----|
| S No.                  | Course Code | Course Title                             | Subject Area | Credits              | L | T | P             | T | P                    | CWS   | PRS   | MTE   | ETE   | PRE |
| <b>First Semester</b>  |             |                                          |              |                      |   |   |               |   |                      |       |       |       |       |     |
| 1                      | IDN-521     | Sensors, Actuators and IOT               | PEC          | 3                    | 2 | 0 | 2             | 2 | 0                    | 20-35 | 20-30 | 20-30 | 40-50 | -   |
| 2                      | IDN-522     | Computer Aided Design                    | PEC          | 3                    | 2 | 0 | 2             | 2 | 0                    | 20-35 | 20-30 | 20-30 | 40-50 | --  |
| 3                      | IDN-523     | Rapid Prototyping                        | PEC          | 3                    | 2 | 0 | 2             | 2 | 0                    | 20-35 | 20-30 | 20-30 | 40-50 | --  |
| <b>Second Semester</b> |             |                                          |              |                      |   |   |               |   |                      |       |       |       |       |     |
| 4                      | IDN-524     | Digital Systems Design                   | PEC          | 3                    | 3 | 0 | 0             | 3 | 0                    | 20-35 | -     | 20-30 | 40-50 | -   |
| 5                      | IDN-525     | CAE in Product Design                    | PEC          | 3                    | 3 | 0 | 0             | 3 | 0                    | 20-35 | -     | 20-30 | 40-50 | -   |
| 6                      | IDN-526     | Reverse Engineering                      | PEC          | 3                    | 3 | 0 | 0             | 3 | 0                    | 20-35 | -     | 20-30 | 40-50 | -   |
| <b>Third Semester</b>  |             |                                          |              |                      |   |   |               |   |                      |       |       |       |       |     |
| 7                      | IDN-527     | Artificial Intelligence and Data Science | PEC          | 3                    | 3 | 0 | 0             | 3 | 0                    | 20-35 | -     | 20-30 | 40-50 | -   |

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## Basket 2 Management Group

| Teaching Scheme |             |                                 |              |         |   |   |   |   |   | Contact Hrs Per Week |     |       |       |     |  | Exam Duration |  | Relative Weightage% |  |  |  |  |
|-----------------|-------------|---------------------------------|--------------|---------|---|---|---|---|---|----------------------|-----|-------|-------|-----|--|---------------|--|---------------------|--|--|--|--|
| S No.           | Course Code | Course Title                    | Subject Area | Credits | L | T | P | T | P | CWS                  | PRS | MTE   | ETE   | PRE |  |               |  |                     |  |  |  |  |
| First Semester  |             |                                 |              |         |   |   |   |   |   |                      |     |       |       |     |  |               |  |                     |  |  |  |  |
| 1               | IDN-528     | Product Planning and Marketing  | PEC          | 3       | 3 | 0 | 0 | 3 | 0 | 20-35                | -   | 20-30 | 40-50 | -   |  |               |  |                     |  |  |  |  |
| Second Semester |             |                                 |              |         |   |   |   |   |   |                      |     |       |       |     |  |               |  |                     |  |  |  |  |
| 2               | IDN-529     | Valuation                       | PEC          | 3       | 3 | 0 | 0 | 3 | 0 | 20-35                | -   | 20-30 | 40-50 | -   |  |               |  |                     |  |  |  |  |
| 3               | IDN-530     | Business and Service Innovation | PEC          | 3       | 3 | 0 | 0 | 3 | 0 | 20-35                | -   | 20-30 | 40-50 | -   |  |               |  |                     |  |  |  |  |
| Third Semester  |             |                                 |              |         |   |   |   |   |   |                      |     |       |       |     |  |               |  |                     |  |  |  |  |
| 4               | IDN-531     | Legal Standards/IPR             | PEC          | 3       | 3 | 0 | 0 | 3 | 0 | 20-35                | -   | 20-30 | 40-50 | -   |  |               |  |                     |  |  |  |  |
| 5               | IDN-532     | Systems Thinking                | PEC          | 3       | 3 | 0 | 0 | 3 | 0 | 20-35                | -   | 20-30 | 40-50 | -   |  |               |  |                     |  |  |  |  |

## Basket 3 Design Group

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| Teaching Scheme    |             |                        |              |         |   |   |   | Contact Hrs Per Week |   |       | Exam Duration |       | Relative Weightage% |     |  |  |  |
|--------------------|-------------|------------------------|--------------|---------|---|---|---|----------------------|---|-------|---------------|-------|---------------------|-----|--|--|--|
| S No.              | Course Code | Course Title           | Subject Area | Credits | L | T | P | T                    | P | CWS   | PRS           | MTE   | ETE                 | PRE |  |  |  |
| First Semester     |             |                        |              |         |   |   |   |                      |   |       |               |       |                     |     |  |  |  |
| 1                  | IDN-533     | User Experience Design | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| Second Semester ** |             |                        |              |         |   |   |   |                      |   |       |               |       |                     |     |  |  |  |
| 1                  | IDN-534     | Interaction Design     | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| 2                  | IDN-535     | Mobility Design        | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| 3                  | IDN-536     | Service Design         | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| 1                  | IDN-537     | Research into Design   | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| 2                  | IDN-538     | Bio Inspired Design    | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| Third Semester     |             |                        |              |         |   |   |   |                      |   |       |               |       |                     |     |  |  |  |
| 1                  | IDN-539     | Computer Game Design   | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |
| 2                  | IDN-540     | Design for Society     | PEC          | 3       | 3 | 0 | 0 | 3                    | 0 | 20-35 | -             | 20-30 | 40-50               | -   |  |  |  |

\*\* Student can take PEC either from first three or last two subjects.

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#### Basket 4 Visual Design Group

| Teaching Scheme |                 |                                         |              |         | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage% |     |       |       |     |
|-----------------|-----------------|-----------------------------------------|--------------|---------|----------------------|---|---|---------------|---|---------------------|-----|-------|-------|-----|
| S No.           | Course Code     | Course Title                            | Subject Area | Credits | L                    | T | P | T             | P | CWS                 | PRS | MTE   | ETE   | PRE |
|                 | First Semester  |                                         |              |         |                      |   |   |               |   |                     |     |       |       |     |
| 1               | IDN-541         | Graphic Design                          | PEC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
|                 | Second Semester |                                         |              |         |                      |   |   |               |   |                     |     |       |       |     |
| 1               | IDN-542         | Product Detailing                       | PEC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 2               | IDN-543         | Contemporary Visual Design              | PEC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
|                 | Third Semester  |                                         |              |         |                      |   |   |               |   |                     |     |       |       |     |
| 1               | IDN-544         | Representation Techniques for Animation | PEC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 2               | IDN-545         | Visual Narrative                        | PEC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |

#### Basket 5 On-line mode: NPTEL

A list of approved NPTEL courses by DAPC will be provided to students.

- Course duration: 20hrs

The courses will be PEC without laboratory work

  
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(a)

## MIM (Masters in Innovation Management)

Teaching SchemeI Year: Autumn Semester

| Teaching Scheme |             |                                        |              |         |                      |   |   |               |   | Relative Weightage% |       |       |       |       |
|-----------------|-------------|----------------------------------------|--------------|---------|----------------------|---|---|---------------|---|---------------------|-------|-------|-------|-------|
| S No.           | Course Code | Course Title                           | Subject Area | Credits | Contact Hrs Per Week |   |   | Exam Duration |   | CWS                 | PRS   | MTE   | ETE   | PRE   |
|                 |             |                                        |              |         | L                    | T | P | T             | P |                     |       |       |       |       |
| 1               | IMN-501     | Design Thinking                        | PCC          | 3       | 1                    | 0 | 4 | 2             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| 2               | IMN-503     | Effective Communication                | PCC          | 2       | 1                    | 1 | 0 | 0             | 2 | 20-35               | 20-30 | -     | -     | 40-50 |
| 3               | IMN-505     | Business Valuation                     | PCC          | 3       | 2                    | 1 | 0 | 3             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| 4               | IMN-507     | Innovative Entrepreneurship Strategies | PCC          | 3       | 2                    | 0 | 2 | 2             | 0 | 20-35               | -     | 20-30 | 40-50 | 20-30 |
| 5               | IMN-509     | Legal Aspects of Business              | PCC          | 2       | 2                    | 0 | 0 | 2             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| 6               | IMN-511     | Business Decision Making               | PCC          | 3       | 3                    | 0 | 0 | 3             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| 7               | IMN-513     | Contemporary Management Practices      | PCC          | 2       | 2                    | 0 | 0 | 2             | 0 | 20-35               | -     | 20-30 | 40-50 | -     |
| Sub Total       |             |                                        |              | 18      |                      |   |   |               |   |                     |       |       |       |       |

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I Year: Spring Semester

| Teaching Scheme |             |                                         |              |         |                      |   |   |               |   | Relative Weightage% |     |       |       |     |
|-----------------|-------------|-----------------------------------------|--------------|---------|----------------------|---|---|---------------|---|---------------------|-----|-------|-------|-----|
| S No.           | Course Code | Course Title                            | Subject Area | Credits | Contact Hrs Per Week |   |   | Exam Duration |   | CWS                 | PRS | MTE   | ETE   | PRE |
|                 |             |                                         |              |         | L                    | T | P | T             | P |                     |     |       |       |     |
| 1               | IMN-502     | Technology Management                   | PCC          | 2       | 2                    | 0 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 2               | IMN-504     | Contemporary Strategic Management       | PCC          | 3       | 2                    | 1 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 3               | IMN-506     | Intellectual Property Management        | PCC          | 3       | 2                    | 1 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 4               | IMN-508     | Process Innovation Management           | PCC          | 2       | 2                    | 0 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 5               | IMN-510     | Product Innovation Management           | PCC          | 2       | 2                    | 0 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 6               | IMN-512     | Innovative Services and Business Models | PCC          | 3       | 2                    | 1 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| 7               | IMN-514     | Financing and Marketing of Innovation   | PCC          | 3       | 2                    | 1 | 0 | 2             | 0 | 20-35               | -   | 20-30 | 40-50 | -   |
| Sub Total       |             |                                         |              | 18      |                      |   |   |               |   |                     |     |       |       |     |

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**II Year: Autumn Semester**

| Teaching Scheme |             |                 |              |         | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage% |     |     |     |     |
|-----------------|-------------|-----------------|--------------|---------|----------------------|---|---|---------------|---|---------------------|-----|-----|-----|-----|
| S No.           | Course Code | Course Title    | Subject Area | Credits | L                    | T | P | T             | P | CWS                 | PRS | MTE | ETE | PRE |
| 1               | IMN-601     | Summer Training | SEM          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | 100 |
| 2               | IMN-602     | Project         | RP           | 2       | -                    | - | - | -             | - | -                   | -   | -   | -   | 100 |
| 3               |             | Elective I      | PEC          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | -   |
| 4               |             | Elective II     | PEC          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | -   |
| 5               |             | Elective III    | PEC          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | -   |
| 6               |             | Elective IV     | PEC          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | -   |
| 7               |             | Elective V      | PEC          | 3       | -                    | - | - | -             | - | -                   | -   | -   | -   | -   |
| Sub Total       |             |                 |              | 20      |                      |   |   |               |   |                     |     |     |     |     |

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**II Year: Spring Semester**

| Teaching Scheme |             |                                  |              |         | Contact Hrs Per Week |   |   | Exam Duration |   | Relative Weightage% |     |     |     |     |
|-----------------|-------------|----------------------------------|--------------|---------|----------------------|---|---|---------------|---|---------------------|-----|-----|-----|-----|
| S No.           | Course Code | Course Title                     | Subject Area | Credits | L                    | T | P | T             | P | CWS                 | PRS | MTE | ETE | PRE |
| 1               | IMN-603     | Project (Continued from Sem III) | RP           | 18      | -                    | - | - | -             | - | -                   | -   | -   | 100 | -   |
|                 |             | Sub Total                        |              |         | 18                   |   |   |               |   |                     |     |     |     |     |
|                 |             | Grand Total                      |              |         | 74                   |   |   |               |   |                     |     |     |     |     |

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**List of Elective Courses for MIM (Innovation Management):**

| S. No. | Course Code | Subject Name                                      | Credit | L | T | P | Exam Dur. (Hrs) |    | Relative Weightage (%) |      |       |       |     |
|--------|-------------|---------------------------------------------------|--------|---|---|---|-----------------|----|------------------------|------|-------|-------|-----|
|        |             |                                                   |        |   |   |   | T               | P  | CWS                    | PR S | MTE   | ETE   | PRE |
| 1      | IMN-521     | IP Portfolio Management                           | 3      | 2 | 1 | 0 | 2               | -- | 20-35                  | -    | 20-30 | 40-50 | -   |
| 2      | IMN-522     | Intellectual Capital and Corporate Value Creation | 3      | 2 | 1 | 0 | 2               | -- | 20-35                  | -    | 20-30 | 40-50 | -   |
| 3      | IMN-523     | Licensing and Commercialization of IP             | 3      | 2 | 1 | 0 | 2               | -- | 20-35                  | -    | 20-30 | 40-50 | -   |
| 4      | IMN-524     | Diffusion of Innovations in Social networks       | 3      | 2 | 1 | 0 | 2               | -- | 20-35                  | -    | 20-30 | 40-50 | -   |
| 5      | IMN-525     | Design for Extreme Affordability                  | 3      | 2 | 1 | 0 | 2               | -- | 20-35                  | -    | 20-30 | 40-50 | -   |

All the elective subjects for MBA and M Des Course are also available for the students of MIM as PECs.

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