

## AVANTIKA UNIVERSITY: COURSE STRUCTURE DETAILS

Avantika University is a Madhya Pradesh state private university and a part of the MIT group of institutions from Pune. MIT group has a nearly four decades of experience in the education domain offering over 80 courses across campuses. Avantika is our first University outside the state of Maharashtra, positioned as destination education campus. It is India's first design-centered University based on learning by doing methodology.

Avantika envisions creating agents of change by imparting in them a keen sense of social responsibility, analytical thinking and problem-solving skills. The university envisages a distinct learning environment where students are empowered to deal with diversity and change to further apply their knowledge and skills to combat real-world challenges. The interdisciplinary, integrative and immersive approach of learning assists the students to augment the quality of higher education, providing qualitative, relevant and contemporary education.

### Degrees Offered at Avantika University

#### A. School of Design:

Bachelor of Design (B.Des): 4 Years Program (1-year foundation program + 3 years of specialization)

Master of Design (M.Des): 2 Years Program

#### B. School of Engineering: Four years program

Bachelor of Technology (B.Tech): 4 Years Program (1-year foundation program + 3 years of specialization)

#### C. School of Fashion: Four years program

Bachelors of Design in Fashion Technology (B.Des) 4 Years Program (1-year foundation program + 3 years of specialization)

### Specializations offered at Avantika University

#### A. School of Design

1. User Experience Design
2. Industrial Design: Offered for both Bachelors and Master's program
3. Communication Design: Offered for both Bachelors and Master's program

#### B. School of Engineering

Computer Science and Engineering (CSE)

#### C. School of Fashion

Fashion Technology



## COURSE STRUCTURE

### School of Design

#### Specialization: User Experience Design

##### Course overview:

Experience Design is a unique program centered on indulging the students into a digital environment to help them understand the ever-changing technologies. The program focuses on user-centered research as a starting point of designing a contextual, personalized and emotional digital interface that makes any environment more comprehensible and usable. The course will expose the young learners to the various digital and research tools, and the critical and creative concepts that will help design an excellent experience.

**Important Subjects:** A few courses that the students learn, to understand the user and their needs

User Research Tools	Information Design	Visual Design
Usability Testing	Typography	Interaction Design
Business Research	Ergonomics	User-centered Design

In addition to these few courses, students also learn a fusion of design, technology, & entrepreneurship to create new concepts, new products, new interactive spaces, new services, new experiences, new communication channels, new systems, new ways of growing and building businesses, along with novel perspectives to look at the future.

Visual Design

Industrial Design

Coding

Entrepreneurship

##### Skills that students build in four years:

The core pedagogy is Learning by Doing, students have to select electives, perform re-design activities, compulsory industry internship for three months, and a capstone project is an essential module to cap the integrated experience.

### Course Details: User Experience Design

Subjects	Electives	Software's Learned
Introduction to User Experience Design Basics of Psychology User Research Tools User-Centred Design Business Research Digital Typography Design Project: Simple Design Cognitive Ergonomics Information Architecture Interaction Design Information Design Visual Design Design Project: Re-Design Introduction to Coding New Media Design Testing Design Design Project: Advanced Design Design Project: Experimental Design Entrepreneurship Design Project: Inventive Design Design Project: Field Project Design Project: System Design	Sustainable Design Universal Design Furniture Design Automobile Accessory Design Design with Natural Materials Design for Six Sigma Narratives and Storytelling Exhibition Design Social Communication Environmental Graphics Immersive Media Design Game Design Artificial Intelligence Foundation Machine Learning Foundation Data Analytics Foundation Electric Vehicles Digital Product Design	Adobe XD Adobe Illustrator Adobe Photoshop Adobe After effects Sketch

## Specialization: Industrial Design

### Course overview:

Industrial Design is a unique program centered on creating delight through good design. The learner starts with an observed need or an idea which is transformed through form, structure, colour, material, texture, environment, and detailing to a digital and physical prototype. The outcome could be a product, an interaction, space, or experience which creates sustainable value and evokes a positive emotional response for the intended user.

### Important Subjects:

A few courses that the students learn, to meet the current and future needs

Product Physiognomy	Advanced Manufacturing	Ergonomics
Product Semantics	Human Machine Interface	Product Typography
Packaging Design	Material and Form	Mechanisms and Joineries

In addition to these few courses, students also learn a fusion of design, technology, and entrepreneurship to create new concepts, new products, new interactive spaces, new services, new experiences, new communication channels, new systems, new ways of growing and creating businesses, along with novel perspectives to look at the future.

Mechanism and Joineries

Spatial Structure and Articulation

Entrepreneurship

### Skills that students build in four years:

The core pedagogy is Learning by Doing, with thematic projects comprising a significant part of the program. An industry internship and a capstone project are an essential module to cap the integrated experience

**Course Details: Industrial Design**

<b>Subjects</b>	<b>Electives</b>	<b>Software Learned</b>
Digital Tools for Designers Material and Form Mechanisms and Joineries Introduction to Ergonomics Product Typography Design Project: Simple Design Product Physiognomy Spatial Structures and Articulation Product Semantics Product Photography Packaging Design Design Project: Re-Design Human Machine Interface Advanced Manufacturing Design Research Design Project: Advanced Design Design Project: Experimental Design Design Project: Inventive Design Design Project: Field Project Entrepreneurship Design Project: System Design	Sustainable Design Universal Design Furniture Design Automobile Accessory Design Design with Natural Materials Design for Six Sigma Narratives and Storytelling Exhibition Design Social Communication Environmental Graphics Immersive Media Design Game Design Artificial Intelligence Foundation Machine Learning Foundation Data Analytics Foundation Electric Vehicles Digital Product Design Professional Practice	Adobe Photoshop Adobe Illustrator Adobe InDesign Rhino Solid Works Keyshot

## Specialization: Communication Design

### Course overview:

Communication Design is an integrated program across different media which transcends visual expression and builds sensorial experiences. It creates new channels of communication and interfaces to address untapped needs for a positive change. It brings an intangible brand association and explores new ways of growing and building sustainable businesses. Learners will be able to connect people with spaces and environment through narratives and visuals.

### Important Subjects:

A few courses that the students learn, to meet the current and future needs of the technology knowledge era:

Typography	Branding	Photography
Layout and Composition	System Design	Information Visualization
Packaging Design	Semiotics	Publication Design

In addition to these few courses, students also learn a fusion of design, technology, and entrepreneurship to create new concepts, new products, new interactive spaces, new services, new experiences, new communication channels, new systems, new ways of growing and building businesses, along with novel perspectives to look at the future.

Visual Design

Digital software

Entrepreneurship

### Skills that students build in four years:

The core pedagogy is Learning by Doing, with thematic projects comprising a significant part of the program. An industry internship and a capstone project are an essential module to cap the integrated experience

**Course Details: Communication Design**

<b>Subjects</b>	<b>Electives</b>	<b>Software Learned</b>
Digital Tools for Designers Communication Theory and Media Studies Semiotics Typography Graphic Composition and Layout Design Project: Simple Design Photography Digital Image-Making Information Visualization Packaging Design Introduction to User Experience Design Design Project: Re-Design Publication Design Reproduction Technologies Design Research Design Project: Advanced Design Design Project: Experimental Design Entrepreneurship Design Project: Inventive Design Design Project: Field Project Entrepreneurship 2 Design Project: System Design Capstone Project	Sustainable Design Universal Design Furniture Design Automobile Accessory Design Design with Natural Materials Design for Six Sigma Narratives and Storytelling Exhibition Design Social Communication Environmental Graphics Immersive Media Design Game Design Artificial Intelligence Foundation Machine Learning Foundation Data Analytics Foundation Electric Vehicles Digital Product Design Professional Practice	Adobe Photoshop Adobe Illustrator Adobe InDesign Adobe After Effects Adobe Audition Autodesk 3DS Max

## School of Engineering

### Specialisation: Computer Science and Engineering

#### Course overview:

Computer Science is an exciting discipline with advanced opportunities in diverse sectors for designing and developing smart solutions. The students apply the principles of engineering, computer architecture, software engineering and signal processing to understand and synthesize such systems. The engineering aspirants will combine creative and analytical skills to craft an idea into reality. The progressive curriculum imbibes problem-solving as the core, to meet the current and future needs of the technology knowledge era.

#### Important Subjects: A few courses that the students learn

Artificial Intelligence	Internet of Things (IoT)	Data Structures
Machine Learning	Software Engineering	Algorithms
Data Analytics	Object Oriented Programming	Database Management System
Cyber Security	Computing	Computer Networks

In addition to these few courses, students also learn design, technology, and entrepreneurship to learn new ways of growing and creating businesses, along with novel perspectives to look at the future.

Interaction Design

UI-UX Design

Immersive Media Design

Entrepreneurship

#### Skills that students build in four years:

During the Capstone Project in the 8th semester, the students have the freedom of doing a 6-month Internship or pursue an Entrepreneurial idea or a business idea that they have been wanting to pursue.

The core pedagogy is Learning by Doing, students have to select electives, perform re-design activities, compulsory industry internships, and a capstone project is an essential module to cap the integrated experience.

#### Projects:

Design Project: Web Application

Design Project: Mobile Application

Design Project: Desktop Application

Design Project: IoT Application

Design Project: Advanced Technology

Design Project: Interdisciplinary

Design Project: User Centred Design

Capstone Project



### Course Details: Computer Science Engineering

Subjects	Electives	Languages, Frameworks, Platform and Tools Learned
Engineering Mathematics Engineering Physics Programming Joy of Electronics Principles of Engineering Engineering Computing Object-Oriented Programming (C++) Database Management System Introduction to User Experience Design Discrete Mathematics Data Structures Algorithms Computer Architecture UI Design Computer Networks Computer Graphics Operating System Entrepreneurship - 1 Entrepreneurship - 2	Artificial Intelligence Foundation Machine Learning Foundation Data Analytics Foundation Cyber Security Foundation Cyber Security Gateway Cyber Security Essentials Introduction to Smart Systems Autonomous Systems Robotics Electric Vehicles Design Research Digital Product Design Sustainable Design Universal Design Immersive Media Design Game Design	JavaScript, C, C++, python, Java, PHP, MySQL, CSS, HTML, PowerShell, jQuery, React.js, Angular/Angular.js, ASP.NET, Vue.js, Ajax, Linux, Windows, Android, AWS, Raspberry Pi, WordPress, Azure, Arduino, Watson, MATLAB, Tableau, Power BI