



Orientation Programme

M.Tech. in Data Science and Engg.

10th October, 2021

BITS Pilani

Pilani | Dubai | Goa | Hyderabad



Welcome !

Introducing BITS,Pilani and WILP



Agenda

- Introducing BITS Pilani and WILP
- Academic Guidelines
- M.Tech (DSE) - Programme Overview
- M.Tech (DSE) - Operations
- Question & Answer



Welcome !

Introducing BITS,Pilani and WILP

Brief history

... “degree-granting college” in 1943, and to ...
... to a university, BITS Pilani in 1964

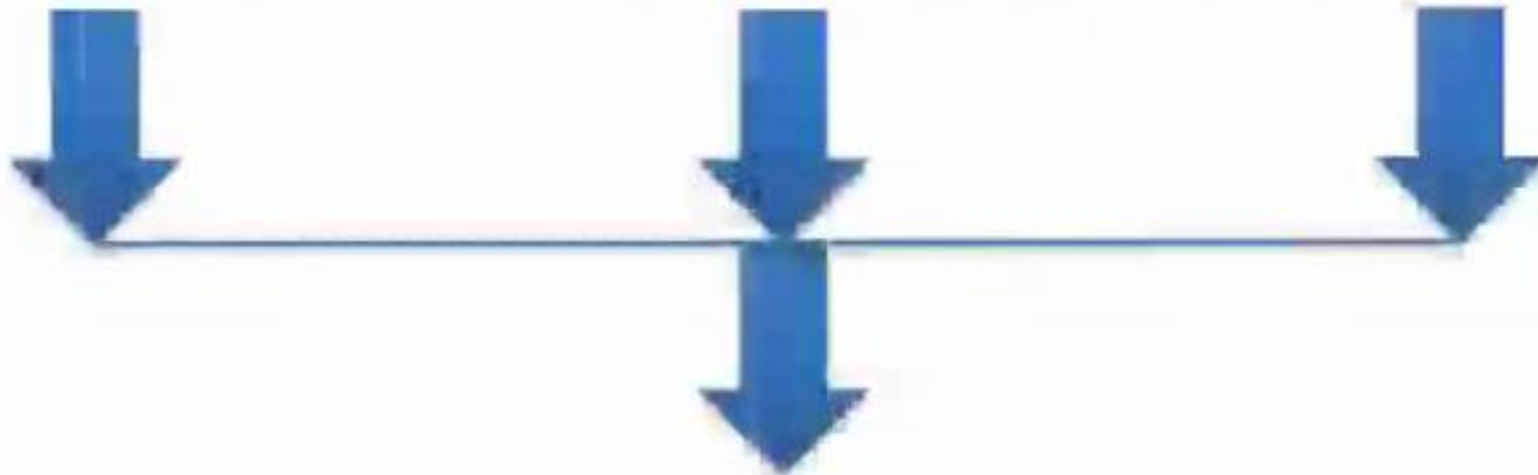


Brief history

Birla College of Engg.
(established 1946)

Birla College of Arts
(established 1943)


Birla College of Sc.,
Commerce & Pharmacy
(established 1943/1950)



Birla Institute of Technology & Science Pilani (or **BITS Pilani**)

(university status bestowed by University Grants Commission in 1964)

BITS' journey, since 1964



- Collaboration with MIT, with Ford Foundation grant (mid-1960s)
- Pioneered modern system of education in mid-60s (first in India, together with IIT Kanpur)
 - Credits-based, semester system, since mid-1960s
 - Continuous and internal evaluation
 - Science-based curriculum
- Pioneered 7.5-months industry practice, since early 1970s
- Pioneered training of working professionals from industry
 - Through “Work-Integrated Learning Programme”, since 1970s
 - Largest in India (with 20,000++ industry professionals)
- Pioneered online test for admissions, since 2005



History



Pilani



Dubai



Goa



Hyderabad

- Deemed to be University established under Sec. 3 of UGC Act 1956 (1964)
- Privately funded
- Accredited by NAAC with 5 star rating (2000), A grade (2009 and 2016)
- IoE (2018)

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Leader in Industry Engagement



BITS Pilani is widely regarded as the pioneer in the field of University-Industry linkages through its off campus programmes.



WILP Programs at a Glance



		Learner Profile			
		10+2 Students	Technical Diploma Holders	B.Sc./ BCA Graduates	BE/ B.Tech. Graduates
Industry	IT & EEE	B.Sc (Design and Computing)	B.Tech. Information Systems	Integrated M.Tech. Software Systems Integrated M.Tech. Computing Systems & Infrastructure	M.Tech. Software Systems M.Tech. Computing Systems & Infrastructure M.Tech. Embedded Systems M.Tech. Microelectronics Post Graduate Programme in Internet of Things Post Graduate Programme in AI/ML
	Data Sciences	-	-	M.Sc. Business Analytics	M.Tech. Data Science & Engineering M.Sc. Business Analytics Post Graduate Programme in Big Data Engg.
	Manufacturing	-	B.Tech. Manufacturing Technology B.Tech. Process Engineering B.Tech. Power Engineering B.Tech. Engineering Design	B.Tech. Manufacturing Technology B.Tech. Process Engineering B.Tech. Power Engineering B.Tech. Engineering Design	M.Tech. Design Engineering M.Tech. Manufacturing Management M.Tech. Quality Management M.Tech. Automotive Engineering M.Tech. Transportation Engineering M.Tech. Digital Manufacturing M.Tech. Automotive Electronics
	Pharma/ Healthcare	B.Sc. (Pharmaceutical Sciences)	B.Tech. Process Engineering	B.Tech. Process Engineering	M.Tech. Pharmaceutical Operations & Management
	Management	-	-	MBA in Consultancy Management MBA in Finance Post Graduate Diploma in Finance	MBA in Manufacturing Management MBA in Quality Management MBA in Consultancy Management MBA in Hospital & Health Systems Management MBA in Finance Post Graduate Diploma in Finance



Academic Guidelines

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Industry	IT & EEE	B.Sc (Design and Computing)	B.Tech. Information Systems	Integrated M.Tech. Software Systems Integrated M.Tech. Computing Systems & Infrastructure	M.Tech. Software Systems M.Tech. Computing Systems & Infrastructure M.Tech. Embedded Systems M.Tech. Microelectronics Post Graduate Programme in Internet of Things Post Graduate Programme in AI/ML
	Data Sciences	-	-	M.Sc. Business Analytics	M.Tech. Data Science & Engineering M.Sc. Business Analytics Post Graduate Programme in Big Data Engg
	Manufacturing	-	B.Tech. Manufacturing Technology B.Tech. Process Engineering B.Tech. Power Engineering B.Tech. Engineering Design	B.Tech. Manufacturing Technology B.Tech. Process Engineering B.Tech. Power Engineering B.Tech. Engineering Design	M.Tech. Design Engineering M.Tech. Manufacturing Management M.Tech. Quality Management M.Tech. Automotive Engineering M.Tech. Transportation Engineering M.Tech. Digital Manufacturing M.Tech. Automotive Electronics
	Pharma / Healthcare	B.Sc (Pharmaceutical Sciences)	B.Tech. Process Engineering	B.Tech. Process Engineering	M.Tech. Pharmaceutical Operations & Management
	Management	-	-	MBA in Consultancy Management MBA in Finance Post Graduate Diploma in Finance	MBA in Manufacturing Management MBA in Quality Management MBA in Consultancy Management MBA in Hospital & Health Systems Management MBA in Finance Post Graduate Diploma in Finance

Academic Guidelines

- 2 year, 4 semester programme

Year	First Semester		U	Second Semester		U
I	DSE* ZC415	Data Mining	3	DSE* ZC413	Introduction to Statistical Methods	3
	DSE* ZC416	Mathematical Foundations for Data Science	4	DSE* ZG523	Introduction to Data Science	3
	DSE* ZG519	Data Structures and Algorithms Design	5		Elective -I	
	DSE* ZG516	Computer Organization & Software Systems	5		Elective-II	
		Total	17		Total	15 (min)
II	Elective-III			DSE*ZG628T	Dissertation	16
	Elective-IV					
	Elective-V					
	Elective-VI		16 (min)			16

- Each unit corresponds to about 30 hrs of effort
- Dissertation is of 16 units, standalone
- Click for sample handout

Sample Course Handout



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TECHNOLOGY & SCIENCE,

PILANI

WORK INTEGRATED LEARNING
PROGRAMMES

COURSE HANDOUT

Part A: Content Design

Course Title:	Mathematics: Pre-Calculus for Data Science
Course No(s):	
Credit Value:	3
Course Author:	C. P. Srinivasan
Version No:	1
Date:	15/09/2023

Course Description

Pre-Calculus is a branch of mathematics that deals with the study of functions, graphs, and algebraic manipulation. It is a foundational course for students pursuing a degree in Data Science, as it provides the necessary mathematical background for understanding the concepts of linear algebra, calculus, and probability.

Course Objectives

No.	Objectives (to be achieved by the end of the course)
CO1	Identify and describe the various types of functions (linear, quadratic, cubic, etc.) and their graphs.
CO2	Identify and describe the various types of functions (linear, quadratic, cubic, etc.) and their graphs, and their applications in real-world scenarios.
CO3	Identify and describe the various types of functions (linear, quadratic, cubic, etc.) and their graphs, and their applications in real-world scenarios, and their applications in real-world scenarios.
CO4	Identify and describe the various types of functions (linear, quadratic, cubic, etc.) and their graphs, and their applications in real-world scenarios, and their applications in real-world scenarios, and their applications in real-world scenarios.
CO5	Identify and describe the various types of functions (linear, quadratic, cubic, etc.) and their graphs, and their applications in real-world scenarios, and their applications in real-world scenarios, and their applications in real-world scenarios.

Text Book(s)

No.	Author(s), Title, Edition, Publishing House
T1	James Stewart, Calculus: Early Transcendentals, 8th Edition, Cengage Learning, 2015
T2	James Stewart, Calculus: Early Transcendentals, 8th Edition, Cengage Learning, 2015

Reference Book(s) & other resources

No.	Author(s), Title, Edition, Publishing House
R1	K. H. Hoffmann and R. Hoffmann, Linear Algebra, 2nd Edition, 2015
R2	James Stewart, Calculus: Early Transcendentals, 8th Edition, Cengage Learning, 2015

Content Outcomes

No.	Title of the module	Reference
M1	1. Mathematics: Set theory, functions, and linear algebra 1.1. Set theory: Set theory, set notation, set operations, Venn diagrams, power set, Cartesian product, relations, functions, injective, surjective, bijective functions, inverse functions, composition of functions, identity function, constant function, linear function, quadratic function, cubic function, etc. 1.2. Functions: Functions, domain, codomain, range, one-to-one, onto, bijective functions, inverse functions, composition of functions, identity function, constant function, linear function, quadratic function, cubic function, etc.	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M2	2. Vector spaces and Linear transformations 2.1. Vector spaces: Vector spaces, subspaces, linear independence, basis, dimension, rank, nullity, etc. 2.2. Linear transformations: Linear transformations, matrix representation, kernel, range, etc.	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M3	3. Eigenvalues, Eigenvectors and singular values 3.1. Eigenvalues 3.2. Eigenvectors 3.3. Singular values and singular vectors	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M4	4. Numerical methods 4.1. Numerical methods for solving linear systems of equations 4.2. Numerical methods for solving nonlinear systems of equations	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M5	5. Matrix Eigenvalue Problems 5.1. Eigenvalue problems in linear algebra 5.2. Eigenvalue problems in nonlinear algebra 5.3. Eigenvalue problems in matrix algebra	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M6	6. Eigenvalues and Eigenvectors 6.1. Eigenvalues and Eigenvectors 6.2. Eigenvalues and Eigenvectors 6.3. Eigenvalues and Eigenvectors 6.4. Eigenvalues and Eigenvectors	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M7	7. Set, Function and Relation: Set theory, functions, and linear algebra 7.1. Set theory: Set theory, set notation, set operations, Venn diagrams, power set, Cartesian product, relations, functions, injective, surjective, bijective functions, inverse functions, composition of functions, identity function, constant function, linear function, quadratic function, cubic function, etc. 7.2. Functions: Functions, domain, codomain, range, one-to-one, onto, bijective functions, inverse functions, composition of functions, identity function, constant function, linear function, quadratic function, cubic function, etc.	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4
M8	8. Graph Theory 8.1. Graph theory: Graph theory, graph notation, graph operations, graph coloring, graph isomorphism, graph automorphism, graph homomorphism, graph monomorphism, graph epimorphism, graph isomorphism, graph automorphism, graph homomorphism, graph monomorphism, graph epimorphism, etc.	1.1. Set: 1.1.1, 1.1.2, 1.1.3, 1.1.4 1.2. Functions: 1.2.1, 1.2.2, 1.2.3, 1.2.4



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BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI WORK INTEGRATED LEARNING PROGRAMMES

COURSE HANDOUT

Part A: Content Design

Course Title	Mathematical Foundations for Data Science
Course No(s)	DSECL ZC416
Credit Units	4
Course Author	G Venkiteswaran
Version No	3
Date	15.04.2021
Lead Instructor	G Venkiteswaran

Course Description

Vector and matrix algebra, systems of linear algebraic equations and their solutions; eigenvalues, eigenvectors and diagonalization of matrices; Calculus and optimization; Counting principles and combinatorics

Course Objectives

No	Objective- The course aims to
CO1	Introduce concepts in linear algebra and to use it as a platform to model physical problems.
CO2	Provide techniques for analytical and numerical solutions of linear equations



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Course Objectives

No	Objective- The course aims to
CO1	Introduce concepts in linear algebra and to use it as a platform to model physical problems.

		<ul style="list-style-type: none"> Eigenvalues and eigenvectors of special matrices and their properties Eigenbases and diagonalization Gerschgorin's Theorem Power Method 	
5-6	Decomposition methods (Eigenvalue, decomposition, QR and SVD) <ul style="list-style-type: none"> Gram-Schmidt Orthogonalization procedure QR decomposition SVD Dimensionality reduction 	T1: Sec 20.9 Class notes	
7-8	Application of linear algebra in optimization. Modelling linear programming problem and the basics of Simplex algorithm and sensitivity analysis. <ul style="list-style-type: none"> Model a LPP in construction of buildings. Model the currency arbitrage optimization problem. Work out the graphical method of solution in the case of 2 variable case Simplex method for simple cases Outline how Gauss Jordan produces the inverse matrix. 	Class notes	
9	Properties of functions <ul style="list-style-type: none"> Continuous functions on closed intervals. 	Class notes	

	<ul style="list-style-type: none">• Gram-Schmidt Orthogonalization procedure• QR decomposition• SVD• Dimensionality reduction	CLASS NOTES
7-8	<p>Application of linear algebra in optimization. Modelling linear programming problem and the basics of Simplex algorithm and sensitivity analysis.</p> <ul style="list-style-type: none">• Model a LPP in construction of buildings.• Model the currency arbitrage optimization problem.• Work out the graphical method of solution in the case of 2 variable case• Simplex method for simple cases• Outline how Gauss Jordan produces the inverse matrix.	Class notes
9	<p>Properties of functions</p> <ul style="list-style-type: none">• Continuous functions on closed intervals, differentiation (1d case)• Taylor series expansion• Maxima and minima• Integral properties (cdf and pdf, even and odd integrands, integration by parts and so on) for 1d	Class notes
10	<p>Calculus of several variables</p> <ul style="list-style-type: none">• Review limits, continuity and differentiability	Class notes

Examination



- Online Examination
 - Hall ticket
 - Mock test
- Mid Semester
 - Open Book
 - 120 Mins
- Comprehensive Exams
 - Open Book
 - 120 Mins
- Makeups
 - Granted in genuine cases
 - Process to apply for makeups will be shared through canvas
 - Not to be considered as a grade improvement exam

Grading & CGPA

Letter Grade	Grade Point	Qualitative grade (dissertation)
A	10	Excellent
A-	9	Very Good
B	8	Good
B-	7	Above Average
C	6	Fair/Average
C-	5	Below average
D	4	Poor
E	2	Exposed (consider as failed)
RRA	0	Required to Register Again

DSE* ZC415	Data Mining	3
DSE* ZC416	Mathematical Foundations for Data Science	4
DSE* ZG519	Data Structures and Algorithms Design	5
DSE* ZG516	Computer Organization and Systems Software	5

DM ☐ B- (7)

MFDS ☐ A (10)

DSAD ☐ B (8)

COSS ☐ C (6)

$$\text{GPA} = (7 \cdot 3 + 10 \cdot 4 + 8 \cdot 5 + 6 \cdot 5) / 17 = 7.70$$

Grading

- Relative grading
- Students with less than 5.5 CGPA and having “E” / “RRA” grade in one or more courses cannot register for Dissertation
- **It is mandatory to attend Mid Semester and Comprehensive Exams to be eligible for grading.**
 - RRA Grade : Awarded in cases where a student is not evaluated on a mandatory component
 - In such cases [RRA's, E Grades, CGPA < 5.5], students must re-register for courses [backlog courses] to improve
 - Limit on maximum number of courses per semester including backlog courses - subject to individual performance

Academic Guidelines

Year	First Semester		U	Second Semester		U
I	DSE* ZC415	Data Mining	3	DSE* ZC413	Introduction to Statistical Methods	3
	DSE* ZC416	Mathematical Foundations for Data Science	4	DSE* ZG523	Introduction to Data Science	3
	DSE* ZG519	Data Structures and Algorithms Design	5		Elective -I	
	DSE* ZG516	Computer Organization & Software Systems	5		Elective-II	
	Total		17	Total		15 (min)
II	Elective-III			DSE*ZG628T	Dissertation	16
	Elective-IV					
	Elective-V					
	Elective-VI		16 (min)			16

- Electives must be chosen among the ones offered so that the minimum unit requirements are met.
 - At the end of third semester,
 - coursework for the minimum of 48 (17+15+16) units must be completed
 - CGPA ≥ 5.5
 - in all the registered courses, student must have earned a grade from {A,A-,B,B-,C,C-,D,D-}
- to proceed to the fourth semester (dissertation)

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- What if the minimum requirements are not met at the end of third semester?
 - Repeat all the courses where the grade is RRA/ E and obtain a grade in {A,A-,B, B-, C,C-, D}
 - If CGPA is less than 5.5 and all the courses have grades in {A,A-,B, B-, C,C-, D}
 - repeat one or more courses [as advised by the institute] where the grades are poor and improve the grades
- Student will proceed to fourth semester of the program only after meeting the minimum requirements mentioned

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- Graduation Requirements
 - Completing courses (core + electives) upto semester 3 meeting requirements
 - Successful completion of dissertation -
 - Grades - { Excellent, Good, Fair, Poor } and not RRA



Major Academic Processes

- Registration
- Certificates
 - **Grade sheet** will be issued at the end of each semester - through canvas - soft copy
 - **Transcript** and **Provisional Certificate** will be issued at the end of the programme (~ 2 months)
 - Finally, **Degree Certificate** will be issued (~ 6 months)
- Feedback

Recommendations



- Plan of study
- Attendance
- Continuous evaluation
- Importance of dissertation
- Ethics and etiquette
- Help Desk for raising support tickets



Program Overview

M.Tech (DSE)

Programme Overview



An Inter-disciplinary field comprising Computer Science and Engineering & Statistics

Data (i.e. understanding, analysing, and using data) is the focus. Topics would span:

- (1) Learning how data drives (decisions in) the world, and
- (2) Algorithmic and computational techniques for data collection, storage, and retrieval, as well as data-driven decision making and applications

Curriculum :

- (1) Strong foundation in mathematics, necessary statistical techniques
- (2) Computing techniques and algorithms for data analysis
- (3) Systems development for a data-driven application pipeline

M.Tech (DSE) Programme Overview



Program Structure

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Note:

Elective -I is

DSE* ZG565 - Machine Learning

- 4U

Elective -III is

DSE* ZG524 - Deep Learning

- 4U



M.Tech (DSE)

Programme Overview

Other Electives on the offer

DSE* ZG557 - Artificial and Computational Intelligence	-5U	
DSE* ZG525 - Natural Language Processing		- 3U
DSE* ZG537 - Information Retrieval		-
4U		
DSE* ZG521 - Graphs - Algorithms and Mining		- 5U
DSE* ZC556 - Stream Processing and Analytics		- 5U
DSE* ZG522 - Big Data Systems		
- 5U		
DSE* ZG517 - Systems for Data Analytics		-
5U		
DSE* ZG555 - Data Visualization and Interpretation		-5U
DSE* ZG526 - Probabilistic Graphical Models		- 4U

M.Tech (DSE)

Programme Overview



Program Structure

Year	First Semester		U	Second Semester		U
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	DSE* ZG516	Computer Organization & Software Systems ✓ ✓	5		Elective-II	
		Total	17		Total	15 (min)
II	Elective-III	DL		DSE*ZG628T	Dissertation	16
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DSE* ZC556 - Stream Processing and Analytics		- 5U
DSE* ZG522 - Big Data Systems		
- 5U		
DSE* ZG517 - Systems for Data Analytics		-
5U		
DSE* ZG555 - Data Visualization and Interpretation		-5U
DSE* ZG526 - Probabilistic Graphical Models		- 4U

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- 4U

- 4U



M.Tech (DSE)

Programme Overview

Other Electives on the offer

DSE* ZG557 - Artificial and Computational Intelligence -5U - 2

DSE* ZG525 - Natural Language Processing - 3U

DSE* ZG537 - Information Retrieval - 4U

DSE* ZG521 - Graphs - Algorithms and Mining - 5U

DSE* ZC556 - Stream Processing and Analytics - 5U

DSE* ZG522 - Big Data Systems - 5U

DSE* ZG517 - Systems for Data Analytics - 5U - 2

DSE* ZG555 - Data Visualization and Interpretation -5U - 2

DSE* ZG526 - Probabilistic Graphical Models - 4U

M.Tech (DSE)

Programme Overview



- **Assignments**
 - Students will work in a virtual group of three, as assigned by the backend using some constraints.
- **Quizzes**
 - Quizzes are online for all the courses. Each quiz will be evaluated for 5%.
- Timelines for quizzes and assignments to be announced by the IC for each courses.

Units and Courses	Quiz	Assignment	Mid Sem Exam (Closed Book)	End Semester Exam (Open Book)	Total
3 Unit Courses	10	10	30	50	100
4 Unit Courses	10	20	30	40	100
5 Unit Courses	5	25	30	40	100

M.Tech (DSE)

Programme Overview



Faculty

- Drawn from industry and academia

Pedagogical Tools/Techniques

- Experiential learning
 - Assignments, case studies, lab exercises
- Collaborative learning
 - Group activities & exercises

Evaluation

- Quiz
- Lab, Assignments, Projects
- Mid semester exam
- End semester exam

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5 Unit Courses	5	25	30	40	100

M.Tech (DSE) Programme Overview



Faculty

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Pedagogical Tools/Techniques

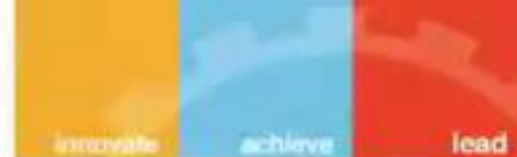
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- Quiz
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Programme Overview



- **Assignments**
 - Students will work in a virtual group of three, as assigned by the backend using some constraints.
- **Quizzes**
 - Quizzes are online for all the courses. Each quiz will be evaluated for 5%.
- Timelines for quizzes and assignments to be announced by the IC for each courses.

Units and Courses	Quiz	Assignment	Mid Sem Exam (Closed Book)	End Semester Exam (Open Book)	Total
3 Unit Courses	10	10	30	50	100
4 Unit Courses	10	20	30	40	100
5 Unit Courses	5	25	30	40	100

M.Tech (DSE)

Programme Overview



- Python, programming language of choice for all the courses
- Optional Course on 'Introduction to Python for Data Science'
 - Recorded sessions are shared through the canvas for your personal reference.
 - No evaluation for this course - not a part of formal course package
- Designed to give an overview of Python and some of python libraries used in courses
 - Python will not be taught as programming language as a part of any other course
 - No evaluation components. Exercises will be given for practice purposes.

Program Operation

Schedules – Program Timelines – [Tentative]



Semester #1	October, 2021	March 2022
Semester #2	April, 2022	September, 2022
Semester #3	October, 2022	March, 2023
Semester #4	April, 2023	September, 2023

Schedule - Lecture Sessions



- Classes will be held over weekends through online mode
- 4 sessions / day
 - Class #1: 8:45 AM to 10:45 AM
 - Class #2: 11:00 AM to 01:00 PM
 - Class #3: 2:00 PM to 4:00 PM
 - Class #4: 4:15 PM to 6:15 PM
- Each course will be offered in multiple sections. Students will be allotted a section for a course. Sections will be allotted in such a way that a student attends all the classes either on Saturday or Sunday
- Sessions will be recorded and posted in the course page for reference.

People involved in the Course Delivery



- Instructor - in - Charge (IC)
 - Leads the course delivery
- Instructors
- Teaching Assistants

Led by IC			
Sec: Sat #1	Sec: Sat #2	Sec: Sun #1	Sec: Sun #2
Instructor #1	Instructor #2	Instructor #3	Instructor #4
Supported by Teaching Assistants			

People involved in the Course Delivery



- Semester #2

Session	Saturday	Sunday
1	Core Course	Core Course
2	Core Course	Core Course
3	Core Course	Core Course
4	Electives - ACI / DVI / [SDA*]	Electives - ACI / DVI / [SDA*]

People involved in the Course Delivery



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Instructor #1	Instructor #2	Instructor #3	Instructor #4
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People involved in the Course Delivery



- Semester #2

Session	Saturday	Sunday
1	Core Course	Core Course
2	Core Course	Core Course
3	Core Course	Core Course
4	Electives - ACI / DVI / [SDA*]	Electives - ACI / DVI / [SDA*]

People involved in the Course Delivery



- Semester #3
 - 7 electives
 - We do not guarantee that all four courses/sections of their choice can be taken on the same day.

Code	Title	Saturday Slot #1	Saturday Slot #2	Sunday Slot #1
DSECLZG526	Probabilistic Graphical Models	2:00:00 PM [PGM #1]		No Sunday Section
DSECLZG537	Information Retrieval	4:15:00 PM [IR #1]		2:00 PM [IR #2]
DSECLZG522	Big Data Systems	4:15 PM [BDS #1]		2:00 PM [BDS #2]
DSECLZG556	Stream Processing and Analytics	2:00 PM [SPA #1]		4:15 PM [SPA #2]
DSECLZG521	Graphs - Algorithms and Mining	2:00 PM [GAM #1]		4:15 PM [GAM #2]
DSECLZG525	Natural Language Processing	9:00 AM [NLP #1]		9:00 AM [NLP #3]
		9:00 AM [NLP #2]		
DSECLZG524	Deep Learning	11:15 AM [DL #1]		11:15 AM [DL #3]
		11:15 AM [DL #2]		

This table is only for representation. Actual schedule will be different from this.

Schedules -Tutorial, evaluation components



- Tutorials / Webinar Sessions
 - 4 sessions of 90 mins for each course
 - Recitation of topics, problem solving will be the focus of the sessions
 - Typically delivered by Teaching Assistants, attached to the course
 - On Tuesday / Thursday from 7:00 PM to 8:30 PM
 - Sessions will be recorded and posted for later reference.
- Mid Semester (120 Mins / course), Comprehensive Exams (120 Mins / course) - **online**:
 - Schedules to be announced at the beginning of semester
- Assignments & Quizzes
 - To be announced through canvas for each courses. No make-ups.

Virtual Lab/ Remote Lab



Web browser window showing the BITS - Pilani Virtual Lab interface.

URL: <https://bits.vlabs.platifi.com/index1.html#/slot-table?virtual-lab=python@bits-pilani.ac.in>

Navigation icons: Home, Book Slot, Resources.

Course Slot Booking Summary:

Course Name	Slots Booked	Slots Available
COMPUTER PROGRAMMING	3/12	9/12
ADVANCED COMPUTER NETWORKS	1/12	11/12
SOFTWARE DEVELOPMENT FOR PORTABLE DEVICE	0/12	12/12
OBJECT ORIENTED PROGRAMMING AND DESIGN	0/12	12/12
CON	0/1	1/1

Table of Booked Slots:

SLOT	COURSE NAME	BOOKED SLOT DATE	BOOKED SLOT TIME	REMOVE	DOWNLOAD PDF	ENTER
1	Computer Programming	03/06/2018	11:00-11:30	Remove	Download PDF	Enter
2	Computer Programming	03/06/2018	11:30-12:00	Remove	Download PDF	Enter
3	Computer Programming	28/05/2018	12:00-12:30	Remove	Download PDF	Enter
4	Advanced Computer Networks	30/07/2018	10:30-12:00	Remove	Download PDF	Enter

Virtual Lab/ Remote Lab



Wip CS-IS Lab

Not secure | bitscsis.vlabs.platifi.com/index1.html#/resources

BITS - Pilani Virtual Lab

Resources

Home

View Slots

Book Slot

Resources

- Advanced Computer Networks
- Cloud Computing
- Compiler Design
- Computer Networks
- Computer Organization And Architecture
- Computer Organization And Software Systems
- Computer Programming
- Database Design And Applications
- Database Systems And Applications
- Data Mining
- Data Structures And Algorithms
- Data Structures And Algorithms Design
- Data Structures And Algorithms Design With Java
- Design And Analysis Of Algorithms
- Digital Electronics And Microprocessors
- Distributed Computing
- Internetworking
- Network Programming

22:45
26-02-2019

Formal Communication



- Formal BITS Notices will be delivered through Canvas Announcements and Emails in BITS ID.
- Configure your BITS email signature to carry the following details

[Your Name as it appears on University Records]

[Your Student ID - All Caps]

M.Tech (DSE)[2021 October Batch]

- Include relevant details when you initiate a email communications with instructors / IC's / and others in BITS.
 - For Ex: your section #, when you write to your IC.
- Always use BITS Email ID for all official communication

Formal Communication



- Communicate with the appropriate ones for quick resolutions.
For Ex:
 - Raise all queries on course contents, clarifications in the canvas discussion forums, messages to TA's, instructors or IC's
 - Other course related concerns as emails to your instructor / IC by email
 - Issues with canvas, matters related to access etc, issue with hall tickets, exam venues etc as tickets in student care help desk - Queries raised here will be typically resolved in 48 hours - You will find options to escalate your queries in the student care help desk in canvas.

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Whom to Contact for support?



- Student Care Help Desk
- Coordinators Contact
 - pc.dse@wilp.bits-pilani.ac.in
- Operations Support
 - ops.dse@wilp.bits-pilani.ac.in



Questions ?

BITS Pilani

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