DEVI AHILYA VISHWAVIDYALAYA, INDORE

SCHOOL OF DATA SCIENCE AND FORECASTING

ROGRAMME CODE: DS5B

PROGRAMME TITLE: MASTER OF SCIENCE (M.Sc.)

-DATA SCIENCE AND ANALYTICS

OBJECTIVES: The broad objectives of the programme are as follows:

- To train and develop in depth understanding of the key technologies in data science and analytics: data mining, data visualization techniques, forecasting methods, and statistics.
- To provide opportunities of higher studies in the area of data science.
- To impart knowledge on various theoretical and practical aspects of data science.
- To practice problem analysis and decision-making.
- To gain practical, hands-on experience with statistical programming languages and big data tools.

ELIGIBILITY: Bachelor degree with Mathematics / Statistics / Computer Science as one of the main subject *OR* B.E./ B.Tech. in any discipline with at least 50% marks in aggregate or an equivalent grade for General / OBC candidates, and 45% marks in aggregate or an equivalent grade for SC/ST and Differently Abled (DA) category candidates from a recognized University/Institute.

OR

Candidates who have appeared in final year examination with above mentioned subject(s) can also apply. Admission will be finalized if the result is declared before August 14 in the admission year and the candidate secures min. % of marks as mentioned above.

AGE LIMIT: As per the directives of Government of Madhya Pradesh, There is no upper age limit for admission to various programmes.

ADMISSION PROCEDURE: The admission of Indian students will be done as per merit in the entrance test. No admission test will be conducted for NRI/ Foreign Students, but Foreign students should have working knowledge of English.

SEATS: 40 (reservation as per state Govt. rules).

DURATION: 2 years

FEE STRUCTURE:

Semester	Academic Fee	Development & Maintenance Fee	Students' Services Fee		Examination Fee	Total (Rs.)	
			Boys	Girls		Boys	Girls
First	15500	12500	3300	3111	2500	33800	33611
Second	15500	12500	2911	2722	2500	33411	33222
Third	15500	12500	3300	3111	2500	33800	33611
Fourth	15500	12500	2911	2722	2500	33411	33222

- Caution money (Refundable) of Rs. 4000/- will be charged additionally in the first semester.
- Alumni Fee of Rs. 500/- will be charged extra in the first semester.
- If a student repeats a paper(s) in a semester, an additional fee of Rs.500/- per paper shall be payable.
- For NRI/ FN/ PIO Candidates, a fee of US$ 3500 Per Annum shall be payable on yearly basis. They will have to pay a refundable deposit of US$ 500 once at the time of admission.
- Hostel Fee and Central Library Fee will be extra.

PROGRAMME STRUCTURE:

First Semester:

Code	Title	Credits (L T P)
CORE COURSES		
DS5B-501	Database Management	3 (2-0-2)
DS5B-503	Forecasting Methods-I	3 (2-1-0)
DS5B-505	Operations Research	4 (3-1-0)
DS5B-507	Probability and Statistics	3 (2-1-0)
DS5B-509	Python for Analytics	3 (2-0-2)
DS5B-511	Advanced Excel	2 (0-0-4)
ELECTIVE COURSES-DISCIPLINE CENTRIC (Any One)		
DS5B-521	Fundamentals of Algorithms	3 (2-0-2)
DS5B-523	Decision Analysis	3 (2-1-0)
ELECTIVE GENERIC: The students can choose following course or any other PG level generic course being run in this campus.		
DS5B-551	Communication Skills	3 (2-1-0)

Second Semester:

Code	Title	Credits (L T P)
CORE COURSES		
DS5B-502	Data Mining and Data Warehousing	3 (2-0-2)

DS5B-504	Machine Learning	3 (2-0-2)
DS5B-506	Linear Algebra and Advanced Calculus	3 (2-1-0)
DS5B-508	Forecasting Methods-II	3 (2-0-2)
DS5B-510	Big Data Technologies	3 (2-0-2)
DS5B-512	Web Mining	3 (2-0-2)
ELECTIVE COURSES-DISCIPLINE CENTRIC (Any One)		
DS5B-522	Statistical Programming in R	3 (2-0-2)
DS5B-524	Scientific Computing	3 (2-1-0)
ELECTIVE GENERIC: The students can choose following course or any other PG level generic course being run in this campus.		
DS5B-552	Technical Communication	3 (2-1-0)

Third Semester:

Code	Title	Credits (L T P)
CORE COURSES		
DS5B-601	Cloud Computing	3 (2-1-0)
DS5B-603	Data Visualization	3 (2-0-2)
DS5B-605	Deep Learning	3 (2-1-0)
DS5B-607	Natural Language Processing	3 (2-0-2)
DS5B-609	Internet of Things	3 (2-0-2)
ELECTIVE COURSES-DISCIPLINE CENTRIC (Any One)		
DS5B-621	Cluster Analysis	3 (2-1-0)
DS5B-623	Multivariate Analysis	3 (2-0-2)
ELECTIVE GENERIC: The students can choose following course or any other PG level generic course being run in this campus.		
DS5B-651	Minor Project	2 (0-0-4)

Fourth Semester:

DS5B-652	Project Dissertation/ Internship	12 (0-0-24)

Note: The above course contents can be modified as per requirement from time to time in accordance with University Ordinance No. 14.

PROGRAM OUTCOMES:

- Understanding of the key technologies in data science and analytics: data mining, data visualization techniques, machine learning, statistics, and NLP.
- Getting knowledge on various theoretical and practical aspects of data science.
- Demonstrate use of team work, leadership skills, and decision making.
- Getting opportunities of higher studies in the area of data science.

PROGRAM SPECIFIC OUTCOMES:

- Apply data analysis techniques to the solution of real world business problems, communicate findings, and effectively present results.
- Recognize and analyze ethical issues in business related to intellectual property, data security, integrity, and privacy.
- Demonstrate knowledge of statistical data analysis techniques utilized in business decision making.
- Apply algorithms to build machine intelligence.
- Work with messy data, applying models, and understanding the business context.
- Work with unstructured data from various sources like video and social media.
- Use Data Visualization techniques.
- Write the programming codes in R and Python.