

SRINIVAS UNIVERSITY

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(State Private University Established by Karnataka Govt. Act No. 42 of 2013 empowered to award degrees under Section 22 Of UGC Act of UGC, New Delhi, & Member of Association of Indian Universities, New Delhi)

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SYLLABUS

For

PG DIPLOMA IN APPLIED DATA SCIENCE

(1 Year – 2 Semester Programme)

(2021-2022)

COLLEGE OF COMPUTER SCIENCE & INFORMATION SCIENCES

Promoters

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PROGRAMME OBJECTIVE

Due to rapid advancement in technology and industrial revolutions, professionals need to re-skill and adapt to the new working environment. Also professionals need to learn corporate workmanship to climb the corporate ladder smoothly. This programme to provide an unique opportunity to build Workopolis corporate mentorship programme with skill building in Data Science and Engineering. The programme aimed at professionals who want to start their career in data science and engineering. The following are objectives of the programme:

1. Learn basic technical skills needed to become data analyst/data scientist/machine learning engineer
2. Learn business domain skills to become data analyst/data scientist/machine learning engineer
3. Practice Freelancing as new work order and start earning while you learn to work with international clients

DEPARTMENT OBJECTIVE

Department of Computer Application of Srinivas University strives to shape outstanding computer professionals with ethical and human values to reshape the destiny. The training imparted aims to prepare young minds for the challenging opportunities in the IT industry with a global awareness rooted in the Indian soil, nourished and supported by experts in the field.

BACKGROUND: DATA IS THE NEW OIL

Back in 18th century, Crude oil was extracted from earth, brought big industrial revolution creating new world with automobiles (nearly \$3000 billion world market), factories, aircrafts and changed business models, lifestyle of the entire world. In 21st century, data is being extracted from internet and bringing a new industrial revolution creating digital economy (a new world order for business and lifestyle). Data Science and Artificial Intelligence are the drivers of new industrial revolution. Many governments of developed countries have adopted AI and Data Science as part of economic agenda for inclusive growth. These opportunities provide **huge demand for experts in Data Analytics, Data Science and Artificial Intelligence.**

PROGRAMME STRUCTURE

The one year programme spread across two semesters. The first semester dedicated to acquiring relevant technical skills for the data science career. The second semester dedicated to gaining work experience in the field of data science.

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COURSE STRUCTURE

SEMESTER 1					
Subject Code	Subject Name	Modules	Hours	Credits	Marks
PGDADS101	Essential Mathematics and Statistics for Data Science	Basic Algebra, Analytical Geometry, Probability, Descriptive Statistics, Regression and Correlation and Analysis of Variance, Data encoding and decoding, Statistical Analysis with R, Applications in data science	4	4	100
PGDADS102	Python Framework for Data Science	Data Analysis with Python Web and Database Frameworks, Cloud and DevOps Frameworks, ML Frameworks, Text processing, Image Processing, PySpark frameworks, Case studies and E2E deployment	4	4	100
PGDADS103	Applied Data Science	Machine learning algorithms, Neural Networks, Deep learning algorithms, Natural Language Processing, Big data analytics, Case studies in domains (Banking, Insurance, Stock Market, E-Commerce, Manufacture, Healthcare, Pharmaceuticals, Logistics)	4	4	100
PGDADS104	Corporate workmanship	Corporate Job Descriptions, Softskills and business communications Business Analysis and presenting data stories, Ethics in Data Science, Data governance and IT Act, Freelancing and Industry visits	4	4	100
PGDADS105	Python framework lab	Jupyter Notebook, PyCharm, AWS, RDS, Git, Ansible, Jenkins, Django, MySQL, MongoDB	3	3	100
PGDADS106	Data Science Lab	Data Science tool kits, Scikit-learn, Keras, PyTorch, Google Colab, ML data pipelines in Azure or Gcloud	3	3	100
PGDADS107	Freelancing lab	Fiverr, Upwork, Freelancer	3	3	
GRAND TOTALS (HOURS, CREDITS, MARKS)			25	25	700

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SEMESTER 2					
Subject Code	Subject Name	Modules	Hours	Credits	Marks
PGDADS201	Project Work	Data Science Project Life Cycle, Project Initiation, Project Planning, Project Execution, Project Monitoring, Project Closure Project status reporting	4	3	100
PGDADS202	Dissertation	publish review articles in blogs/journals/conferences	2	2	50
PGDADS203	Freelancing lab	Student must demonstrate a earning of 500 USD or equivalent from Freelance work or equivalent.	40	20	500
PGDADS204	Viva Voce	Final project report on Freelance/Project work and Evaluation, Interview preparation, Placement activities	4	3	150
GRAND TOTALS(HOURS, CREDITS, MARKS)			48	28	800

GENERAL GUIDELINES FOR THE SECOND SEMESTER

The second semester is fully dedicated to project work and placement related activities. The objective is to gain a 6-months work experience while working on industry projects and international clients. The students must work for 48 hrs per week and report a timesheet of their work to the Programme Director. Students will be assigned a Industry project or Freelancing work and they should report the earnings from the project work in a invoice or billing with a registered client. The minimum criterion to complete the second semester is to demonstrate earning of 500 USD.

Apart from this, they need to regularly submit the weekly project status report and monthly report of their earnings or billings from the projects.

Dissertation work consists of writing report of their project work along with timesheets and documentary evidence of earnings of USD 500.

SCHEME OF EVALUATON FOR SECOND SEMESTER

The evaluation scheme for the second semester consists of two stages:

STAGE 1: Evaluation of Freelancing lab (500 marks)

Minimum Criterion:

1. Documentary evidence of earnings of USD 500 or equivalent

2. Timesheets for 6 months work experience
3. Documentary evidence of client feedback on the projects
4. Approval letter from Programme Director for the entire above criterion.

STAGE 2: Project work and report (300 marks)

Minimum Criterion:

1. Project report submitted to the University department
2. Student must successfully complete mock interviews from the Programme Directors office. Student must attach the Interview clearance certificate from the Programme Directors office.
3. Student must produce the evidence of placement activities performed by him
4. Approval letter from Programme Director for the entire above criterion.
