



# INTERNATIONAL M.Sc. PROGRAMME

## PROSPECTUS

## TWO YEAR POSTGRADUATE DEGREE IN **DATA SCIENCE**

September 2020 - September 2022



## POSTGRADUATE CERTIFICATE IN DATA SCIENCE

2020-2021 – at Stella Maris College (SMC) and Gnamam Institute for Training in Advanced Analytics (GITAA) (IIT Madras incubated startup company), Chennai, India.

Contact Classes: Monday to Friday, 2.00 - 6.00 pm



2021- 2022: Liverpool Hope University, UK

## ON THE COLLABORATION

To offer a Joint Certificate Programme titled Stella Maris and GITAA Postgraduate Certificate in Data Science by Stella Maris College and the Gnamam Institute for Training in Advanced Analytics leading to an award in M.Sc. Degree in Data Science conferred by the Liverpool Hope University, UK.

Recognizing the importance of the field of Data Science, LHU, SMC and GITAA have embarked on a collaboration towards skilling students in this upcoming area.



## LIVERPOOL HOPE UNIVERSITY

Liverpool Hope Business School is a leading international business school with a strong collegiate environment. The Business School is renowned for educational excellence in Business Management, Marketing, Human Resource Management, Accounting and Finance, Business Ethics, Law and Tourism Management. Our aim is to inspire a more sustainable future by developing graduates who are educated in sustainable business management. Recognised for its teaching quality, in the National Student Survey, Liverpool Hope Business Management Programme ranks at 90% (7% above national average) for students who believe their skills have improved whilst studying at Liverpool Hope.



## STELLA MARIS COLLEGE

Stella Maris College, a Catholic minority institution of higher education for women, was founded in 1947. The College is an autonomous institution affiliated to the University of Madras and has 19 undergraduate and 12 postgraduate programmes, as well as M.Phil and Ph.D. programmes and Postgraduate Diploma Courses. The College is at the forefront of higher education in India by virtue of its commitment to academic excellence, research and service learning. The College has established an educational roadmap that provides a framework for quality education and stimuli for lifetime learning. It aims at inspiring students through education. The College was accorded by the UGC as the College with Potential of Excellence in 2016.



## GITAA

Gnanam Institute for Training in Advanced Analytics (GITAA), an IITM incubated company was founded by Prof. Raghunathan Rengaswamy and Prof. Shankar Narasimhan from the Indian Institute of Technology, Madras. The IIT ecosystem backs this initiative through IIT Madras incubation cell. Several faculty from IITs and industry professionals contribute to teaching at GITAA.

Structured on the prevalent industry prerequisites and the emerging technological needs of tomorrow, GITAA's courses on AI, Machine learning and Big Data include a fine balance between pragmatic learning and leadership focused content. Having trained over 2500 professionals, students and executives so far, GITAA endeavors to ably upskill professionals and business leaders for today's AI-led world.

# PROGRAMME STRUCTURE

Postgraduate Certificate in Data Science  
2020 – 21

## Time Frame:

Course commencement on: September, 2020

Course completion on: August 30, 2021

## Programme Structure:

### Phase 1:

At SMC and GITAA: Sept – Nov 2020

- Core Modules - 4
- Elective Modules - 1 out of 2

### Phase 2:

At SMC and GITAA: January 2021- April 2021

- Modules – 4
- Electives – 1 out of 2

### Phase 3:

At SMC: May 2021 – August 2021

- Internship

## Curriculum: Course Content

Core Modules:

- Statistical Methods
- Numerical Methods
- Data Base Management System (Theory and Practical)
- Operating Systems (Theory and Practical)
- Data Analytics and R
- Basics of Academic Writing and Research
- Data Communication & Networking (Theory and Practical)
- Data Mining (Theory and Practical)
- Elective Papers (2 modules out of 4)
- Optimization of Techniques
- Discrete Mathematics & Modeling Techniques
- Soft Computing
- Data Security & Authentication
- Programing: MATLAB & Python
- Time Series Analysis and Forecasting



### Phase 4:

At the Liverpool Hope University, UK,  
October 2021

- Programming – Julia, Lua
- Cloud Computing and Big Data Technology (Theory & Practical)
- High Performance Computing
- Artificial Intelligence
- Visualization, VR & AR
- Advances in Data Science

### Phase 5:

- Dissertation

At STELLA MARIS COLLEGE with GITAA

PHASE	COURSE TYPE	TITLE OF THE COURSE
I	Core	Statistical Methods
I	Core	Linear Algebra and Numerical Methods
I	Core	Data Base Management System (Theory & Practical)
I	Core	Fundamentals of Data Analytics using Python
I	Elective	Discrete Mathematics & Modeling Techniques
I	Elective	Time Series Analysis using Python

II	Core	Operating System (Theory & Practical)
II	Core	Programming - MATLAB, R, Tableau
II	Core	Data Communication and Networking (Theory & Practical)
II	Core	Advanced Machine Learning using Python
II	Elective	Optimization Techniques
II	Elective	Data Security and Authentication

III	Core	INTERNSHIP
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Phase I: September - Nov

Phase II: Dec - April

Phase III: May - July

## M.SC. DATA SCIENCE COURSES OF STUDY CHOICE BASED CREDIT SYSTEM

### TOPSHEET

At LIVERPOOL HOPE UNIVERSITY  
September 2021 -22

Programming - Julia, Lua
Internet of Things
Cloud Computing & Big Data
Technology (Theory & Practical)
High Performance Computing
Artificial Intelligence
Visualisation, VR and AR
Advances in Data Science
DISSERTATION

The programme offers placement opportunities in India and in the UK. The Liverpool Hope Career guidance office and the SMC CGC will be able to support placements.

For further information please contact at Stella Maris College:

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## ELIGIBILITY CRITERIA

Stella Maris developed a Postgraduate Certificate in Data Science which reflects the requirements and expectations of the (Masters) programme under the UK Framework for Higher Education Qualifications

Eligibility Criteria for M.Sc. Data Science:

Any Undergraduate Degree with either

- At least one paper on Mathematics in UG
- Mathematics at Higher Secondary Level

Hope requires a successful completion of the programme offered by SMC and GITAA with grade equivalent to a distinction (75%) in order to qualify for admission to the Hope University for Masters in Data Science.

Students shall have achieved a grade equal to distinction in the programme at Stella Maris.

In addition to the successful completion of the programme outlined above, LHU requires compliance with its English Language requirements in one of the following ways:

- IELTS 6.5, including a minimum of 6 in reading and writing, and 5.5 in speaking and listening
- TOEFL ibt 87 including a minimum of 18 in reading and 17 in writing
- Pearsons Test of English Academic 65, including a minimum of 59 in reading and writing, and 51 in speaking and listening.

