

# Somaiya Vidyavihar University

K J Somaiya College of Engineering , Vidyavihar, Mumbai.

Department of Computer Engineering

## Honours Degree Program Orientation, May 13, 2023

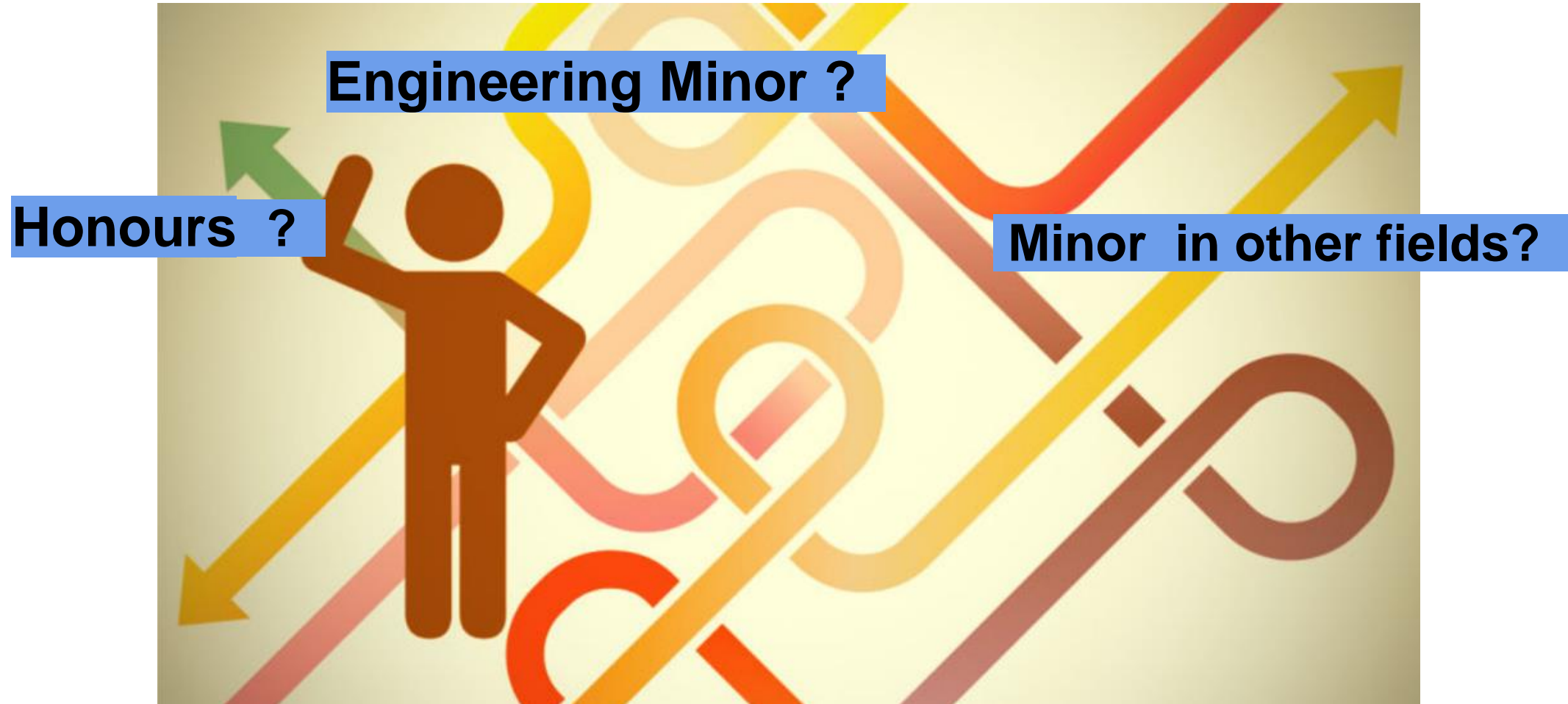


**SOMAIYA**  
VIDYAVIHAR UNIVERSITY

K J Somaiya College of Engineering



# Honours Degree Programme Orientation



# Minor and Honours Degree Programmes

- Academic Flexibility
- Students enrolled in SVU programmes for major degrees can earn 20 additional credits to acquire
  - **Minor: "Acquire Interdisciplinary Skills with Minor"**
  - In some other branch of the college or in other fields offered by colleges on campus so as to broaden horizons
  - **Honours: "Deep dive in your discipline with Honours"**
  - Creates an opportunity to acquire deeper and advanced knowledge and skills in an upcoming field in Major discipline, which helps for higher studies or better job prospects.

# Honours Degree Programmes: Who can apply?

- **Students, from KJSCE**
  - After completion of first year of engineering in SVU for enrolment in Honours in your Discipline
- **Selection based on**
  - Academic background
  - Availability of seats in Honours Programme
- Enrolment in **any one** minor or Honours program is possible by acquiring additional 20 credits spread over 3 years.
- A Minor / Honours degree will be awarded at the same time bachelor's degree is awarded.

# Department of Computer Engineering

## Honours degree Programmes

(Academic year 2023-24)

Sr.No	Name of Honours degree Programme
1	Data Science and Analytics
2	Cyber Security and Forensics
3	Software Project Management
4	Geospatial Computing



# 1. Highlights of the Programme: Data Science and Analytics

- Applications of principles of Data Science to the analysis of diverse problems.
- Use software tools and algorithms from statistics, applied mathematics, Computer Science to model and analyze real-world data, communicate findings, and effectively present results using data visualization techniques.
- Deployment of latest tools and technologies to analyze large amounts Data.
- Understand the ethical practices that are importantly and inevitably tied to data-driven decision-making.

# Structure of Honours Degree Programme

## Data Science and Analytics

### Credit Scheme

Course Name	Teaching Scheme (Hrs.) TH – P – TUT	Total (Hrs.)	Credits Assigned TH – P – TUT	Total Credits	Suggested semester of Major degree
Applied Data Science	3 – 0 – 0	03	3 – 0 – 0	03	III
Machine Learning	3 – 2 – 0	05	3 – 1 – 0	04	IV
Data Visualization	3 – 2 – 0	05	3 – 1 – 0	04	V
Advanced Data Mining	3 – 0 – 0	03	3 – 0 – 0	03	VI
Data Analytics	3 – 2 – 0	05	3 – 2 – 0	04	VII
Applied Project / Internship	0 – 4 – 0	04	0 – 2 – 0	02	VIII
<b>Total</b>	15 – 10 – 0	<b>20</b>	<b>15 – 5 – 0</b>	<b>20</b>	

## 2. Highlights of the Programme: Cyber Security and Forensics

The offered programme aims to give the understanding of:

- Security goals, vulnerabilities, threats & controls.
- Implementation of various control mechanisms related to various security services.
- Understand cybercrime, its prevention and cyber laws.
- Carrying out the various information security-related tasks such as Penetration Testing and Vulnerability Analysis.
- Understand Digital forensics and Advanced Offensive Security techniques.



# Structure of Honours Degree Programme

## Cyber Security & Forensics

### Credit Scheme

Course Name	Teaching Scheme (Hrs.) TH – P – TUT	Total (Hrs.)	Credits Assigned TH – P – TUT	Total Credits	Suggested semester of Major degree
Applied Cryptography	3 – 2 – 0	05	3 – 1 – 0	04	III
Cyber Security, Forensics and Cyber Law	3 – 0 – 0	03	3 – 0 – 0	03	IV
Block Chain Technology	3 – 2 – 0	05	3 – 1 – 0	04	V
Vulnerability Assessment and Penetrative Testing	3 – 2 – 0	05	3 – 1 – 0	04	VI
Secure Coding	3 – 0 – 0	03	3 – 0 – 0	03	VII
Applied Project / Internship	0 – 4 – 0	04	0 – 2 – 0	02	VII or VIII
<b>Total</b>	<b>15 – 10 – 0</b>	<b>25</b>	<b>15 – 5 – 0</b>	<b>20</b>	

### 3. Highlights of the Programmes: Software Project Management

The offered programme aims to impart following skills:

- Project management skills required for effective project management.
- Study and use of tools for management of software projects.
- The students will also be exposed to legal and ethical practices for project management.
- Development of students' management and leadership skills.

# Structure of Honours Degree Programme

## Software Project Management

### Credit Scheme

Course Name	Teaching Scheme (Hrs.) TH – P – TUT	Total (Hrs.)	Credits Assigned TH – P – TUT	Total Credits	Suggested semester of Major degree
Project Management : Professional practices	3 – 2 – 0	05	3 – 1 – 0	04	III
Applied Project Management	3 – 0 – 0	03	3 – 0 – 0	03	IV
Project management – planning and Execution	3 – 2 – 0	05	3 – 1 – 0	04	V
Agile project management	3 – 2 – 0	05	3 – 1 – 0	04	VI
Ethics in project management	3 – 0 – 0	03	3 – 0 – 0	03	VII
Applied Project / Internship	0 – 4 – 0	04	0 – 2 – 0	02	VII or VIII
<b>Total</b>	<b>15 – 10 – 0</b>	<b>25</b>	<b>15 – 5 – 0</b>	<b>20</b>	

# 4. Highlights of the Programme: Geospatial Computing

The offered programme aims to give the understanding of:

- Harvest relevant geospatial data sets to prepare knowledge base.
- Analyse the information for meaningful insights.
- Display these insights effectively using visualization tools such as maps, graphs, statistics, and cartograms, etc.
- Develop applications to resolve problems by predictive or decisive algorithms and methods.

# Structure of Honours Degree Programme

## Geospatial Computing

### Credit Scheme

Course Name	Teaching Scheme (Hrs.) TH – P – TUT	Total (Hrs.)	Credits Assigned TH – P – TUT	Total Credits	Suggested semester of Major degree
Introduction to GIS	3 – 2 – 0	05	3 – 1 – 0	04	III
Principles of Remote Sensing	3 – 0 – 0	03	3 – 0 – 0	03	IV
Spatial data analysis	3 – 2 – 0	05	3 – 1 – 0	04	V
Quantitative analysis in GIS applications	3 – 2 – 0	05	3 – 1 – 0	04	VI
GIS and remote sensing in public health	3 – 0 – 0	03	3 – 0 – 0	03	VII
GIS application Project/ Internship	0 – 4 – 0	04	0 – 2 – 0	02	VII or VIII
<b>Total</b>	<b>15 – 10 – 0</b>	<b>25</b>	<b>15 – 5 – 0</b>	<b>20</b>	

# Questions?



# Thank You ...!