



Scheme of Study of the Program

Bachelor of Science (Information Technology)

With Specialization in

Data Science

Internet of Things

Artificial Intelligence

Semester I, II, III, IV, V & VI

(w.e.f Batch 2018)

1st Semester – Scheme of Study

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	*Introduction to Computer Science	4	4	100	70	20	5	5
2	*Programming In C	4	4	100	70	20	5	5
3	*Discrete Mathematics	4	4	100	70	20	5	5
4	∞ Business Communication	4	4	100	70	20	5	5
5	∞ Hindi	2	2	50	35	10	2.5	2.5
6	» IT Awareness - I	2	2	50	35	10	2.5	2.5
	Practical							
7	* Computer Science - Lab	2	4	50	30	10	5	5
8	* Programming In C - Lab	2	4	50	30	10	5	5
	TOTAL	24	28	600	410	120	35	35

**** CIA – Continuous Internal Assessment – Based on Class Participation / Assignment**

* Core Subjects | ▲ Generic Subjects | » Skill Enhancement Subjects | ∞ Ability Enhancement Subjects

2nd Semester – Scheme of Study

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Data Structure through C	4	4	100	70	20	5	5
2	* Object Oriented Programming with C++	4	4	100	70	20	5	5
3	* Operating System	4	4	100	70	20	5	5
4	* Numerical & Statistical Methods	4	4	100	70	20	5	5
5	∞ English	2	2	50	35	10	2.5	2.5
6	» IT Awareness - II	2	2	50	35	10	2.5	2.5
	Practical							
7	* Data Structure through C - Lab	2	4	50	30	10	5	5
8	* Object Oriented Programming with C++ - Lab	2	4	50	30	10	5	5
9	* Operating System - Lab	2	4	50	30	10	5	5
	TOTAL	26	32	650	440	130	40	40

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3rd Semester – Scheme of Study

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	*Programming with Java	4	4	100	70	20	5	5
2	*Design and Analysis of Algorithms	4	4	100	70	20	5	5
3	* Microprocessor Architecture	4	4	100	70	20	5	5
4	*Database Management System	4	4	100	70	20	5	5
5	* Applied Mathematics	4	4	100	70	20	5	5
6	»Python Programming	4	4	100	70	20	5	5
	Practical							
7	*Programming with Java -Lab	2	4	50	30	10	5	5
8	* Microprocessor -Lab	2	4	50	30	10	5	5
8	*Database Management System - Lab	2	4	50	30	10	5	5
9	» Python Programming -Lab	2	4	50	30	10	5	5
	TOTAL	32	40	800	540	160	50	50

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4th Semester – Scheme of Study

Specialization – Data Science

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Introduction to Data Science	4	4	100	70	20	5	5
2	*R Programming Language	4	4	100	70	20	5	5
3	*Python for Data Science	4	4	100	70	20	5	5
4	»Machine Learning with R	4	4	100	70	20	5	5
5	∞Big Data Analytics	4	4	100	70	20	5	5
	Practical							
6	* R Programming Language – Lab	2	4	50	30	10	5	5
7	* Python for Data Science – Lab	2	4	50	30	10	5	5
8	»Machine Learning with RLab	2	4	50	30	10	5	5
9	» Big Data Analytics – Lab	2	4	50	30	10	5	5
	TOTAL	28	36	700	470	140	45	45

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4th Semester – Scheme of Study

Specialization – Internet of Things

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Internet of Things	4	4	100	70	20	5	5
2	* Sensor Technologies	4	4	100	70	20	5	5
3	* Embedded System	4	4	100	70	20	5	5
4	» Web Programming	4	4	100	70	20	5	5
5	∞ Big Data Analytics	4	4	100	70	20	5	5
	SWAYAM/MOOC/Others	NC	Value added course/Certification in IOT					
	Practical							
6	* Sensor Technologies -Lab	2	4	50	30	10	5	5
7	* Embedded System - Lab	2	4	50	30	10	5	5
8	» Web Programming - Lab	2	4	50	30	10	5	5
9	∞ Big Data Analytics – Lab	2	4	50	30	10	5	5
	TOTAL	28	36	700	470	140	45	45

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4th Semester – Scheme of Study

Specialization – Artificial Intelligence

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Introduction to RPA Tools	4	4	100	70	20	5	5
2	* Introduction to Process Automation	4	4	100	70	20	5	5
3	* Six Sigma and Lean Methods	4	4	100	70	20	5	5
4	» R Programming Language	4	4	100	70	20	5	5
5	∞ Machine Learning	4	4	100	70	20	5	5
	SWAYAM/MOOC/Others	NC	Value added course/Certification in IOT					
	Practical							
6	* Introduction to RPA Tools Lab	2	4	50	30	10	5	5
7	* Introduction to Process Automation Lab	2	4	50	30	10	5	5
8	» R Programming Language Lab	2	4	50	30	10	5	5
9	∞ Machine Learning with R Lab	2	4	50	30	10	5	5
	TOTAL	28	36	700	470	140	45	45

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5th Semester – Scheme of Study

Specialization – Data Science

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Internet of Things	4	4	100	70	20	5	5
2	»NoSQL Databases	4	4	100	70	20	5	5
3	* Software Engineering	4	4	100	70	20	5	5
4	<u>Discipline Specific Elective I</u> (any One) ⓓ Enterprise Java ⓓ Next Generation Technologies	4	4	100	70	20	5	5
5	<u>Discipline Specific Elective II</u> (any One) ⓓ Probabilistic Graphical Models ⓓ Design and Analysis of Experiments	4	4	100	70	20	5	5
	SWAYAM/MOOC/Others	NC	Value added course/Certification in Data Science					
	Practical							
6	* Internet of Things - Lab	2	4	50	30	10	5	5
7	»NoSQL Databases – Lab	2	4	50	30	10	5	5
8	<u>Discipline Specific Elective I</u> (any One) ⓓ Enterprise Java – Lab ⓓ Next Generation Technologies - Lab	2	4	50	30	10	5	5
	TOTAL	26	32	650	440	130	40	40

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5th Semester – Scheme of Study

Specialization – Internet of Things

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Introduction to Cyber Security	4	4	100	70	20	5	5
2	∞ Embedded C with Aduino	4	4	100	70	20	5	5
3	<u>Discipline Specific Elective I (any One)</u> ⓓ Enterprise Java ⓓ Next Generation Technologies	4	4	100	70	20	5	5
4	<u>Discipline Specific Elective II (any One)</u> ⓓ Machine Learning with R ⓓ Digital Signal Processing	4	4	100	70	20	5	5
5	<u>Generic Elective – I</u> ▲ Introduction to Data Science ▲ Cloud Computing	4	4	100	70	20	5	5
	Practical							
6	∞ Embedded C with Aduino - Lab	2	4	50	30	10	5	5
7	<u>Discipline Specific Elective I (any One)</u> ⓓ Enterprise Java - Lab ⓓ Next Generation Technologies - Lab	2	4	50	30	10	5	5
8	<u>Discipline Specific Elective II (any One)</u> ⓓ Machine Learning Lab ⓓ Digital Signal Processing Lab	2	4	50	30	10	5	5
	TOTAL	26	32	650	440	130	40	40

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5th Semester – Scheme of Study

Specialization – Artificial Intelligence

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	Cloud Deployment And Management	4	4	100	70	20	5	5
2	Natural Language Processing	4	4	100	70	20	5	5
3	Digital Image Processing	4	4	100	70	20	5	5
4	<u>Discipline Specific Elective I (any One)</u> Ⓓ Enterprise Java Ⓓ Next Generation Technologies	4	4	100	70	20	5	5
5	<u>Discipline Specific Elective II (any One)</u> Introduction to Data Science Pattern Recognition	4	4	100	70	20	5	5
	Practical							
6	∞ Cloud Deployment And Management Lab	2	4	50	30	10	5	5
7	Natural Language Processing Lab	2	4	50	30	10	5	5
8	<u>Discipline Specific Elective I (any One)</u> Ⓓ Enterprise Java - Lab Ⓓ Next Generation Technologies - Lab	2	4	50	30	10	5	5
	TOTAL	26	32	650	440	130	40	40

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6th Semester – Scheme of Study

Specialization – Data Science

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	»Time Series Analysis	4	4	100	70	20	5	5
2	<u>Discipline Specific Elective III (any One)</u> * Exploratory Data Analysis and Data Visualisation Techniques * Deep Learning	4	4	100	70	20	5	5
3	<u>Discipline Specific Elective IV (any One)</u> ⌘ Mobile Application Development ⌘ Artificial Neural Networks	4	4	100	70	20	5	5
	Practical							
4	»Project	4	4	100	50	40	5	5
5	Time series Analysis – Lab	2	4	50	30	10	5	5
6	<u>Discipline Specific Elective IV (any One)</u> ⌘ Mobile Application Development Lab ⌘ Artificial Neural Networks Lab	2	4	50	30	10	5	5
	TOTAL	20	24	500	320	120	30	30

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6th Semester – Scheme of Study

Specialization – Internet of Things

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Software Engineering	4	4	100	70	20	5	5
2	<u>Discipline Specific Elective III (any One)</u> Ⓢ Mobile Application Development Ⓢ Artificial Intelligence	4	4	100	70	20	5	5
3	<u>Discipline Specific Elective IV (any One)</u> Ⓢ Business Intelligence Ⓢ Artificial Neural Networks	4	4	100	70	20	5	5
	Practical							
4	» Project	4	4	100	50	40	5	5
5	<u>Discipline Specific Elective III (any One)</u> Ⓢ Mobile Application Development Lab Ⓢ Artificial Intelligence Lab	2	4	50	30	10	5	5
6	<u>Discipline Specific Elective IV (any One)</u> Ⓢ Business Intelligence Lab Ⓢ Artificial Neural Networks - Lab	2	4	50	30	10	5	5
	TOTAL	20	24	500	320	120	30	30

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6th Semester – Scheme of Study

Specialization – Artificial Intelligence

S.No	Name of the Subject	Credit	Contact Hours Per Week	Total Marks	End Term Theory/ Practical Exam	Mid Term Theory/ Practical Exam	CIA **	Attendance
1	* Software Engineering	4	4	100	70	20	5	5
2	<u>Discipline Specific Elective III (any One)</u> ⚡ Data Visualization ⚡ Business Intelligence	4	4	100	70	20	5	5
3	<u>Discipline Specific Elective IV (any One)</u> ⚡ Mobile Application Development ⚡ Artificial Neural Networks	4	4	100	70	20	5	5
	Practical							
4	» Project	4	4	100	50	40	5	5
5	<u>Discipline Specific Elective III (any One)</u> ⚡ Data Visualization Lab ⚡ Business Intelligence Lab	2	4	50	30	10	5	5
6	<u>Discipline Specific Elective IV (any One)</u> ⚡ Mobile Application Development Lab ⚡ Artificial Neural Networks - Lab	2	4	50	30	10	5	5
	TOTAL	20	24	500	320	120	30	30

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* Core Subjects | ▲ Generic Subjects | »Skill Enhancement Subjects | ∞Ability Enhancement Subjects | ⚡ Discipline Specific Elective