

# AKAL UNIVERSITY

TALWANDI SABOO

(Estb. under Punjab State Act No. 25 of 2015)

FACULTY OF COMPUTER SCIENCE, DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

## Course Structure B. C.A (HONS ) Specialization in Data Analytics

Sr. No	Category of Courses	Credits
1	Foundation Core (FC)	75
2	Professional Core (PC)	40
3	Employability Enhancement Skills (EES)	38

L-Lecture
T-Tutorial
P-Practical
J-Project
C-Credit

Sr.NO	Structure of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
									Internal	MCQ Exam/Practical File	End Semester Examination
<b>Semester 1</b>											
1	EES		Communications Skills I	3	1	0		3	20	20	60
2	FC		Digital Electronics	4	1	1		3	20	20	60
3	FC		Foundations of Computer Science	4	1	1		3	20	20	60
4	FC		Problem Solving and Programming	4	1	0		3	20	20	60
5	FC		Problem Solving and Programming Lab	0	0	4		3	20	20	60
6	FC		Basic Mathematics	4	1	0		3	20	20	60
Total				19	5	6	0	18	120	120	360

Sr.NO	ature of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
Semester 2									Internal	MCQ Exam/Practical File	End Semester Examination
1	EES		Communication Skills II	3	1	0		3	20	20	60
2	FC		Data Structures and Algorithms	4	1	0		4	20	20	60
3	FC		Relational Database Management Systems	4	1	0		4	20	20	60
4	FC		Computer System Architecture	4	1	0		3	20	20	60
5	FC		Data Structures and Algorithms Lab	0	0	4		3	20	20	60
6	FC		Relational Database management Systems Lab	0	0	4		3	20	20	60
Total				15	4	8	0	20	120	120	360

Sr.NO	ature of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
Semester 3									Internal	MCQ Exam/Practical File	End Semester Examination
1	FC		Discrete Mathematics	4	1	0		3	20	20	60
2	FC		Data Commincation and Networking	4	1	0		3	20	20	60
3	FC		Object Oriented Programming using JAVA	4	1	0		4	20	20	60
4	FC		Operating Systems and Linux	4	1	0		4	20	20	60
5	FC		Object Oriented Programming using JAVA Lab	0	0	3		3	20	20	60
6	FC		Operating Systems and Linux Lab	0	0	3		3	20	20	60
7	EES		MOOC/Seminar/Internships			1		1			
Total				16	4	7	0	21	120	120	360

Sr.NO	ature of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
Semester 4									Internal	MCQ Exam/Practical File	End Semester Examination
1	FC		Internet and Web Programming	4	1	0		3	20	20	60
2	PC		Introduction to Python Programming	4	1	0		4	20	20	60
3	PC		Statistical Foundation of Data Science I	4	1	0		4	20	20	60
4	PC		Big Data Analytics	4	1	0		4	20	20	60

5	FC		Internet and Web Programming Lab	0	0	3		3	20	20	60
6	PC		Introduction to Python Programming Lab	0	0	3		3	20	20	60
7	EES		*Minor Project				10	10	20	20	60
Total				16	4	6	10	31	140	140	420

Sr.NO	Nature of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
									Internal	MCQ Exam/Practical File	End Semester Examination
<b>Semester 5</b>											
1	PC		Machine Learning	4	1	0		4	20	20	60
2	FC		Computer Graphics	4	1	0		3	20	20	60
3	FC		Environmental Sciences	3	1	0		2	20	20	60
4	PC		Statistical Foundation of Data Science II	4	1	0		4	20	20	60
5	PC		Machine Learning Lab	0	0	3		3	20	20	60
6	FC		Computer Graphics LAB	0	0	4		2	20	20	60
7	EES		MOOC/Seminar/Internships			1		1			
Total				15	4	8	0	19	120	120	360

Sr.NO	Nature of Cour	Course Code	Course Title	L	T	P	J	C	Marks		
									Internal	MCQ Exam/Practical File	End Semester Examination
<b>Semester 6</b>											
1	PC		Deep Learning	4	1	0		4	20	20	60
2	PC		Pattern Recognition	4	1	0		4	20	20	60
3	PC		Information Security and Privacy	3	1	0		3	20	20	60
4	PC		Deep Learning Lab	0	0	3		3	20	20	60
5	EES		MOOC/Seminar/Internships			1		1			
6	EES		Project	0	0	0	20	20	0	0	200
Total				11	3	4	0	15	80	80	440