



St. PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Deemed to be University U/S 3 of the UGC Act, 1956)

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**DEPARTMENT OF COMPUTER APPLICATIONS**

**BCA, BCA (Honours) with specialization in Data Science, BCA (Honours) with specialization in AI&ML, and BCA (Honours with Research) 2026-27 CURRICULUM**

Semester	Course Code	Title of the Course	Category	NCrF	SDG Goal	Instruction Hours / week			Credi(s)	Marks		
						L	T	P		CIA	ESE	Total
I	25CAU121	Problem Solving Techniques*	SEC	4.5	4,8	4	0	4	5	40	60	100
I	25CAU122	Computer Architecture*	DSC	4.5	4,9	4	0	4	5	40	60	100
I	25MAU104	Mathematics Foundations to Computer Science I	DSC	4.5	4,9	4	0	0	3	40	60	100
I	25CAU141	Office Automation	MDC	4.5	4,9	4	0	0	3	40	60	100
I	25EVS001	Environmental Science	VAC	4.5	4,8, 12	2	0	0	2	40	60	100
I	25TAU151/ 25HIU151/ 25TEU151/ 25FRU151/ 25KAU151	Tamil Hindi Telugu French Kannada	AEC	4.5	4,10,16	3	0	0	2	40	60	100
<b>Total</b>						<b>22</b>	<b>0</b>	<b>8</b>	<b>20</b>	<b>240</b>	<b>360</b>	<b>600</b>
II	25CAU221	Data Structures*	DSC	4.5	4,9	4	0	4	5	40	60	100
II	25CAU222	Object Oriented Programming*	SEC	4.5	4,9	4	0	4	5	40	60	100
II	25MAU204	Mathematics Foundations to Computer Science II	DSC	4.5	4,8	4	0	0	3	40	60	100
II	25CAU241	Web Technologies	SEC	4.5	4,8	4	0	0	3	40	60	100
II	25IKSU001	Introduction to Indian Knowledge system	VAC	4.5	4,6, 10	3	0	0	2	40	60	100
II	25ENU251	English	AEC	4.5	4,10,16	3	0	0	2	40	60	100
<b>Total</b>						<b>19</b>	<b>1</b>	<b>10</b>	<b>20</b>	<b>300</b>	<b>300</b>	<b>600</b>
III	25CAU321	Python Programming*	SEC	5	4,9	4	0	4	5	40	60	100
III	25CAU322	Data Base Management System*	DSC	5	4,9	4	0	4	5	40	60	100
III	25CAU312	Professional Elective	DSE	5	4,9	1	0	4	3	40	60	100

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III	25MAU302	Probability and Statistics	DSC	5	4,8	4	0	0	3	40	60	100
III	25UHVU001	Universal Human Values	VAC	5	4,9	3	0	0	1	100	-	100
III	25CAU341	UI/UX Design	DSC	5	4,9	3	0	0	3	40	60	100
III	25CAU381	Internship - I	SEC	5	4,8,9	-	-	-	2	100	-	100
<b>Total</b>						<b>18</b>	<b>0</b>	<b>12</b>	<b>23</b>	<b>240</b>	<b>360</b>	<b>700</b>
IV	25CAU421	Computer Networks*	DSC	5	4,9	4	0	4	5	40	60	100
IV	25CAU422	Artificial Intelligence*	DSC	5	4,9	4	0	4	5	40	60	100
IV	25CAU403	Design and Analysis of Algorithms	DSC	5	4	3	0	0	3	40	60	100
IV	25CAU404	Quantitative Techniques	DSC	5	4,9	3	0	0	2	40	60	100
IV	25CAU412	Professional Elective - II**	DSE	5	4,9	1	0	4	3	40	60	100
IV	25IKSU002	Vedic Mathematics	VAC	4.5	4,6,10,11,13	0	1	2	2	100	-	100
<b>Total</b>						<b>18</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>240</b>	<b>360</b>	<b>600</b>
V	25CAU501	Entrepreneurship and Startup	DSC	5.5	5,8,9	3	0	0	2	40	60	100
V	25CAU522	Professional Elective - III*	DSE	5.5	4,9	4	0	4	5	40	60	100
V	25CAU523	Professional Elective - IV*	DSE	5.5	4,9	4	0	4	5	40	60	100
V	25CAU524	Professional Elective - V*	DSE	5.5	4,8,9	4	0	4	5	40	60	100
V	25CAU581	Internship	SEC	5.5	4,8,9	0	0	0	3	100	-	100
V	25CAU515	SoftSkills	AEC	5.5	4,9	3	0	0	1	100	-	100
<b>Total</b>						<b>18</b>	<b>0</b>	<b>12</b>	<b>21</b>	<b>260</b>	<b>300</b>	<b>600</b>
VI	25CAU621	Generative AI*	DSC	5.5	4,7,9	4	0	4	5	40	60	100
VI	25CAU623	Professional Elective - VI*	DSE	5.5	4,9	4	0	4	5	40	60	100
VI	25CAU624	Professional Elective - VII*	DSE	5.5	4,9	4	0	4	5	40	60	100
VI	25CAU405	Design Thinking and Innovation	SEC	5	4,8	3	0	0	2	40	60	100
VI	25CAU690	Major Project	SEC	5.5	1,3,10	0	0	3	4	40	60	100
<b>Total</b>						<b>15</b>	<b>0</b>	<b>15</b>	<b>20</b>	<b>320</b>	<b>480</b>	<b>800</b>
<b>Semester VII BCA Honours with Research</b>												
VII	25CAU701	Advanced Data Analysis Tools	DSC	6	9,12,17	5	0	0	4	40	60	100
VII	25CAU702	Research Methodology	DSC	6	4,9,17	5	0	0	4	40	60	100
VII	25CAU713	Research Internship Report and Viva Voce	DSC	6	4,8,17	2	0	2	2	40	60	100
VII	25CAU723	Professional Elective - VIII*	DSE	6	4,9	4	0	4	5	40	60	100
VII	25CAU724	Professional Elective - IX*	DSE	6	4,9	4	0	4	5	40	60	100
<b>Total</b>						<b>20</b>	<b>0</b>	<b>10</b>	<b>20</b>	<b>200</b>	<b>300</b>	<b>500</b>

<b>Semester VII BCA Honours Specialization in AIML</b>												
VII	25CAU703	Optimization of ML	DSC	6	4,9,17	4	0	0	3	40	60	100
VII	25CAU704	Social Network Analysis	DSC	6	9,12,17	4	0	0	3	40	60	100
VII	25CAU723	Professional Elective – VIII*	DSE	6	4,9	4	0	4	5	40	60	100
VII	25CAU724	Professional Elective – IX*	DSE	6	4,9	4	0	4	5	40	60	100
VII	25CAU790	Project Work Phase I	SEC	6	4,9	0	0	6	-	-	-	-
VII	25CAU781	Summer Internship	SEC	6	4,9	0	0	0	4	40	60	100
<b>Total</b>						<b>16</b>	<b>0</b>	<b>14</b>	<b>20</b>	<b>200</b>	<b>300</b>	<b>500</b>
<b>Semester VII BCA Honours Specialization in Data Science</b>												
VII	25CAU705	Advanced Statistical methods for	DSC	6	4,9, 17	4	0	0	3	40	60	100
VII	25CAU706	Python for Data Science	DSC	6	4,8, 17	4	0	0	3	40	60	100
VII	25CAU723	Professional Elective – VIII*	DSE	6	4,9, 17	4	0	4	5	40	60	100
VII	25CAU724	Professional Elective – IX*	DSE	6	4,9, 17	4	0	4	5	40	60	100
VII	25CAU790	Project Work–Phase I	SEC	6	4,9, 17	0	0	6	-	-	-	-
VII	25CAU781	Summer Internship	SEC	6	4,9, 17	0	0	0	4	40	60	100
<b>Total</b>						<b>16</b>	<b>0</b>	<b>14</b>	<b>20</b>	<b>200</b>	<b>300</b>	<b>500</b>
<b>Semester VIII BCA Honours Specialization in AIML / DS</b>												
VIII	25CAU821	Professional Elective – X*	DSE	6	4,9, 17	4	0	4	5	40	60	100
VIII	25CAU822	Professional Elective – XI*	DSE	6	9,12,17	4	0	4	5	40	60	100
VIII	25CAU823	Professional Elective – XII*	DSE	6	4,9, 17	4	0	4	5	40	60	100
VIII	25CAU891	Dissertation Work(Started in VII semester)	SEC	6	4,9, 17	0	0	6	6	40	60	100
<b>Total</b>						<b>12</b>	<b>0</b>	<b>18</b>	<b>21</b>	<b>200</b>	<b>300</b>	<b>500</b>
<b>Semester VIII BCA Honours with Research</b>												
VIII	25CAU890	Project (For Research Track)	SEC	6	9,12,17	0	0	0	20	40	60	100
<b>Total</b>									<b>20</b>	<b>40</b>	<b>60</b>	<b>100</b>

## Proposed Streams with Discipline Specific Electives (DSE)

### 1. BCA General

Semester	Course Code	Professional Elective
III	25CAU312A	Operating System**
IV	25CAU412A	Computer Graphics**
V	25CAU522A	Web Programming*
V	25CAU523A	Node Js and React Js*
V	25CAU524A	R Programming*
VI	25CAU623A	Mobile Application*
VI	25CAU624A	Middleware Technologies*
VII	25CAU723A	Introduction to ML*
VII	25CAU724A	Introduction to Data Science*
VIII	25CAU821A	Digital Image Processing*
VIII	25CAU822A	Natural Language Processing*
VIII	25CAU823A	Big Data Analytics*

## 2. BCA AIML

Semester	Course Code	Professional Elective
III	25CAU312B	Feature Engineering**
IV	25CAU412B	Introduction to ML**
V	25CAU522B	Neural Network*
V	25CAU523B	Digital Image Processing*
V	25CAU524B	Natural Language Processing*
VI	25CAU623B	Deep Learning for Computer Vision*
VI	25CAU624B	Predictive Analysis*
VII	25CAU723B	Explainable AI*
VII	25CAU724B	Evolutionary Algorithm*
VIII	25CAU821B	Speech Recognition*
VIII	25CAU822B	Augmented Reality & Virtual Reality*
VIII	25CAU823B	Security aspects of ML*

## 3. BCA Data Science

Semester	Course Code	Professional Elective
III	25CAU312C	Basics of Data Analytics using Spreadsheet**
IV	25CAU412C	Data Visualization**
V	25CAU522C	Introduction to Data Science*
V	25CAU523C	Time Series Analysis*
V	25CAU524C	Machine Learning*
VI	25CAU623C	Big Data Analytics*
VI	25CAU624C	Exploratory Data Analysis*
VII	25CAU723C	Business Intelligence & Analytics*
VII	25CAU724C	Data Mining & Warehousing*
VIII	25CAU821C	Advanced Data Visualization
VIII	25CAU822C	Cloud Computing for Data Analytics
VIII	25CAU823C	Data Security & Privacy

\* EMBEDDED COURSE    \*\* TWO UNITS WITH LAB