

# BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI, INDIA

## Year wise Course Structure for Bachelor of Engineering (Computer Science) with intermediate exit points

### First Year

I SEMESTER				II SEMESTER			
Course No	Course Title	Units	Hours/week	Course No	Course Title	Units	Hours/week
HU 1001	Technical English	1.0	4	MA 2101	Mathematics-II	1.0	4
PH 1001	Physics-I	1.0	4	CP 3005	OOPS in C++	1.0	4
CP 2003	Unix & C Programming	1.0	4	CH 2103	Environmental Studies	1.0	4
MA 1101	Mathematics-I	1.0	4	EC 4007	Logic Design	1.0	4
CP 1101	Information Technology	1.0	4	CP 4005	Discrete Mathematical Structure	1.0	4
ME 1005	Engineering Drawing-I	1.0	4	CP 4001	Programming in JAVA	1.0	4
CP 1102	PL-I (IT)	0.5	2-3	CP 3006	PL-III (C++)	0.5	2-3
CP 2004	PL-II (Unix & C)	0.5	2-3	PE 1001	Workshop Practice-I	0.5	2-3
PH 1002	Physics Lab -1	0.5	2-3	CP 4002	Logic Design Lab.	0.5	2-3
ME 1006	Engineering Drawing Lab-I	0.5	2-3	EC 3002	PL IV (JAVA)	0.5	2-3
GA 1001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3	GA 2001	NCC/NSS/PT & Games/ Creative Arts	0.5	2-3
<b>Total Units</b>		<b>8.5</b>	<b>34-39</b>	<b>Total Units</b>		<b>8.5</b>	<b>34-39</b>
<b>Certificate in Computer Engineering</b>				<b>Cumulative units Certificate course</b>		<b>17</b>	

### Second Year

III SEMESTER				IV SEMESTER			
CP 4007	Data and File Structure	1.0	4	EC 3001	Basic Electronics	1.0	4
CP 5009	System Programming	1.0	4	ME 1001	Engineering Mechanics	1.0	4
CH1101	Engineering Chemistry	1.0	4	CP 5001	Formal Language & Automat Theory	1.0	4
MA 3101	Mathematics-III	1.0	4	EE 2001	Basic Electrical Engineering	1.0	4
PH 3003	Physics-II	1.0	4	CP 4003	Scientific Computing	1.0	4
ME 2003	Engineering Graphics-II	1.0	4	CP 6011	System Analysis and Design	1.0	4
ME 2002	Engineering Graphics-II Lab.	0.5	2-3	EC 3002	Basic Electronics Lab.	0.5	2-3
PE 3304	Workshop Practice-II	0.5	2-3	ME 1002	Engineering Mechanics Lab.	0.5	2-3
CH 1002	Chemistry Lab.	0.5	2-3	EE 3302	Electrical Engineering Lab.	0.5	2-3
CP 5026	PL-VII (DFS)	0.5	2-3	CP 4008	Programming Lab-V (SC)	0.5	2-3
GA 3001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3	GA 4001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3
<b>Total Units</b>		<b>8.5</b>	<b>34-39</b>	<b>Total Units</b>		<b>8.5</b>	<b>34-39</b>
<b>Diploma in Computer Engineering</b>				<b>Cumulative units Diploma course</b>		<b>34</b>	

### Third Year

V SEMESTER				VI SEMESTER			
EC 4005	Discrete & Integrated Analog Circuit	1.0	4	CP 6001	Computer System Architecture	1.0	4
CP 5003	Database Management System	1.0	4	CP 6003	DBMS-II	1.0	4
CP 5005	Interactive Computer Graphics	1.0	4	CP 6005	Operating System Concepts	1.0	4
CP 5007	Assembly Language Programming	1.0	4	CP 6007	Design and Analysis of Comp. Algorithm	1.0	4
ME 3106	Thermal Engineering	1.0	4	CP 6009	Funda. of Comp. Communications	1.0	4
EC 5017	Pulse & Digital Circuit	1.0	4	EE 3001	Introduction to System Theory	1.0	4
CP 5004	Programming Lab-VI	0.5	2-3	CP 6004	Programming Lab-VIII	0.5	2-3
EC 4006	Integrated Circuit Lab.	0.5	2-3	CP 6006	Programming Lab-IX	0.5	2-3
CP 5008	Assembly Language Progr. Lab	0.5	2-3	CP 6008	Programming Lab-X	0.5	2-3
EC 5018	Pulse & Digital Circuit Lab	0.5	2-3	CP 6012	Project-I	0.5	2-3
Total Units		8	32-36	Total Units		8	32-36
<b>Advanced Diploma in Computer Engineering</b>				<b>Cumulative units in Advanced Diploma</b>			
				50			

### Fourth Year

VII SEMESTER				VIII SEMESTER			
CP7021	Artificial Intelligence & exp sys	1.0	4	CP8021	Software Engineering	1.0	4
CP7023	Distributed Operating System	1.0	4	CP8023	Simulation and Modelling	1.0	4
CP7025	Computer networks	1.0	4	CP8025	Parallel Computing	1.0	4
CP7027	Soft Computing	1.0	4	MB6001	Principle Of Management	1.0	4
	Elective - I	1.0	4		Elective-III	1.0	4
	Elective –II	1.0	4		Elective-IV	1.0	4
				Sessional			
CP7020	Sys software Dev lab	0.5	2-3	CP8026	Prog Lab XIII(PC)	0.5	2-3
CP7022	Prog Lab XI (Art Intelligence)	0.5	2-3		Prog Lab XIV-Elective	0.5	2-3
CP7026	Prog Lab XII (C Net)	0.5	2-3	CP8050	Dept Project-IV	1.0	4-6
CP7050	Dept Project-II	0.5	2-3		Electives: -		
	Electives: -			CP8027	Digital Image processing	1.0	4
CP7029	Advance computer Architecture	1.0	4	CP8029	Natural Language Processing	1.0	4
CP7031	Per evaluation of comp System	1.0	4	CP8031	Computational Geometry	1.0	4
CP7033	Optimization theory	1.0	4	CP8033	Embedded system design	1.0	4
CP7035	Pattern recognition	1.0	4	CP8035	Multimedia computing & communication	1.0	4
CP7037	Internet and intranet engineering	1.0	4	CP8037	Advanced Comp graphics	1.0	4
CP7039	Genetic Algorithm	1.0	4	CP8039	Neural networks And Applications	1.0	4
EC7011	Statistical theory of communication	1.0	4	EC8011	VLSI Design	1.0	4
EC7013	Mobile and cellular communication	1.0	4	EC8013	Speech Processing	1.0	4
EC7019	Computer Hardware	1.0	4	EC8015	Advanced Microprocessors	1.0	4
EE5307	Digital Signal processing	1.0	4	EC8017	Digital Signal Processing Architectures	1.0	4
Total Units		8	32-36	Total Units		8	32-36
<b>Bachelor degree in Computer Engineering</b>				<b>Cumulative units for Bachelor degree</b>			
				66			