

Bhartiya Vidya Bhavan's
Sardar Patel Institute of Technology
[Knowledge is Nectar]

MCA PROGRAM AT SPIT: 2020 ITERATION

Nomenclature of the Courses

BSC	Basic Science Course
SBC	Skilled Based Course
ABL-SATVA	Self- Accomplishment Through Various Activities
ABL-SEVA	Social Empowerment Through Various Activities
PC	Program Core
TE	Thread Elective
PE	Program Elective
MLC	Mandatory Learning Course
OE	Open Elective
HSSE	Humanities and Social Science Elective

Abbreviations

L	Lecture Hour	O	Other Work (Assignments, Self-Study, etc)
T	Tutorial Hour	E	Total Engagement in Hours for the Learners
P	Laboratory Hour	C	Credit Assigned

CURRICULUM STRUCTURE

Sem I (For Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	BSC	MA501	Linear Algebra	2	1	0	5	8	3
2	PC	MC501	Data Structures	2	0	2	4	8	3
3	PC	MC502	Database Management System	3	0	2	5	10	4
4	PC	MC503	Software Engineering	3	0	2	5	10	4
5	SBC	MC504	Web Technology Lab	0	0	4	4	8	2
6	SBC	AS501	Writing Skills	1	0	2	2	5	2
7	HSSE	HSEX1	HSS-I	2	0	0	3	5	2
8	ABL	SVXX / STXX	SEVA/SATVA I/II	0	0	0	2	2	1
			TOTAL	13	1	12	30	56	21

Sem I (For Non Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	BSC	MA501	Linear Algebra	2	1	0	5	8	3
2	BSC	MA502	Discrete Mathematics	2	0	0	3	5	2
3	PC	MC501	Data Structures	2	0	2	4	8	3
4	PC	MC502	Database Management System	3	0	2	5	10	4
5	PC	MC503	Software Engineering	3	0	2	5	10	4
6	SBC	MC504	Web Technology Lab	0	0	4	4	8	2
7	PC	MC505	Problem Solving using OOPs Lab	2	0	2	2	6	3
8	SBC	AS501	Writing Skills	1	0	2	2	5	2
			TOTAL	15	1	14	30	60	23

Sem II (For Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	BSC	MA503	Probability and Statistics	3	0	0	4	7	3
2	PC	MC506	Java Programming	2	0	4	3	9	4
3	PC	MC507	Design and Analysis of Algorithms	2	0	2	3	7	3
4	PC	MC508	Process Automation	2	0	2	4	8	3
5	PE	MC5X1	Thread Elective-I /Program Elective-I	3	0	2	4	9	4
6	SBC	MC509	Mobile Programming Lab	0	0	4	4	8	2
7	SBC	AS502	Communication & Presentation Skills	1	0	2	2	5	2
8	HSSE	HSEX2	HSS-II	2	0	0	3	5	2
			TOTAL	15	0	16	27	58	23

Sem II (For Non Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	BSC	MA503	Probability and Statistics	3	0	0	4	7	3
2	PC	MC510	Operating System	3	0	0	4	7	3
3	PC	MC506	Java Programming	2	0	4	3	9	4
4	PC	MC507	Design and Analysis of Algorithms	2	0	2	3	7	3
5	PC	MC508	Process Automation	2	0	2	4	8	3
6	PE	MC5X1	Thread Elective-I /Program Elective-I	3	0	2	4	9	4
7	SBC	MC509	Mobile Programming Lab	0	0	4	4	8	2
8	SBC	AS502	Communication & Presentation Skills	1	0	2	2	5	2
			TOTAL	16	0	16	28	60	24

SUMMER TERM (For Computer/IT Graduates)					
No	Type	Code	Course	E	C
1	MLC	AS601	Constitution of India	50	NC
2	SBC	AS602	Project-I (Project to address social problem)	150	3
3	SBC	SVXX / STXX	SEVA/SATVA I/II	50	1
			TOTAL	250	4

SUMMER TERM (For Non Computer/IT Graduates)					
No	Type	Code	Course	E	C
1	MLC	AS601	Constitution of India	5	NC
2	SBC	SVXX / STXX	SEVA/SATVA I/II	5	1
3	HSS	OEHXX	Open Elective from Humanities	10	NC
			TOTAL	100	1

Sem III (For Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	OE*	OEXXX	Open Elective-I	3	0	0	5	8	3
2	PE	MC6X2	Thread Elective-II /Program Elective-II	3	0	2	5	10	4
3	PE	MC6X3	Thread Elective-III /Program Elective-III	3	0	2	5	10	4
4	SBC	MC601	Project-II	0	0	8	6	14	4
5	HSSE	HSEX3	HSS-III	2	0	0	3	5	2
6	SBC	AS603	Selling and Negotiation Skills	2	0	0	3	5	2
7	SBC	SVXX / STXX	SEVA/SATVA III/IV	0	0	0	2	2	1
			TOTAL	13	0	12	29	54	20

Sem III (For Non Computer/IT Graduates)									
No	Type	Code	Course	L	T	P	O	E	C
1	PC	MC602	Computer Networks	2	0	0	3	5	2
2	OE*	OEXXX	Open Elective-I	3	0	0	5	8	3
3	PE	MC6X2	Thread Elective-II /Program Elective-II	3	0	2	5	10	4
4	PE	MC6X3	Thread Elective-III /Program Elective-III	3	0	2	5	10	4
5	SBC	MC601	Project-II	0	0	8	6	14	4
6	SBC	AS603	Selling and Negotiation Skills	2	0	0	3	5	2
7	SBC	SVXX / STXX	SEVA/SATVA III/IV	0	0	0	2	2	1
			TOTAL	13	0	12	29	54	20

Sem IV										
No	Type	Code	Course	L	T	P	O	E	C	
1	OE*	OEXXX	Open Elective-II	3	0	0	5	8	3	
2	SBC*	SVXX / STXX	SEVA/SATVA V/VI	0	0	0	2	2	1	
3	SBC	MC610	6-Month Industry Internship/Research internship at SPIT or Other Institute / Internship with Startup at TBI	0	0	0	0	45	12	
			TOTAL	3	0	0	7	55	16	

THREAD ELECTIVES

Sr. No.	Thread	Thread Elective I	Thread Elective II	Thread Elective III
1	Data Science	Machine Learning	Deep Learning	Visualization and Data Analytics
2	Testing	Software Testing	Quality Assurance	Risk Analysis
3	Any new thread approved by BoS			

PROGRAM ELECTIVES

MC5XX	IoT and I ² oT
MC5XX	Cloud Computing
MC5XX	Augmented and Virtual Reality
MC5XX	3D Printing
MC5XX	Artificial Intelligence and Machine learning
MC5XX	Cyber Security
MC5XX	Block Chain Technology
MC5XX	Robotics
MC5XX	Data Warehousing and Mining
MC5XX	Computer Graphics
MC5XX	Machine Learning
MC5XX	Software Testing
MC5XX	Ethical Hacking
MC5XX	Any other Course approved by the Dean Academics and Principal

OPEN ELECTIVES

OEHXX	Management Principles
OEHXX	IPR and Patents
OEHXX	Law for Engineers
OEHXX	Organizational Behavior
OEHXX	Leadership, Innovation and Entrepreneurship
OEHXX	Project Management
OEHXX	Finance for Engineers
OEHXX	Research Methodology
OEHXX	Any course approved by Dean Academics and Principal

Humanities and Social Science Electives

National Education policy 2019 has aptly spelled out the necessity of Humanities in the Professional Education. It quotes, "A holistic and liberal education as described so beautifully in India's past is indeed what is needed for the education of India in the future to truly lead the country into the 21st century and the fourth industrial revolution. Even engineering schools such as the IITs must move towards a more liberal education integrating arts and humanities". Every program at SPIT has three baskets of humanities. Learners are encouraged to take diversified courses in the field of languages, law, history, economics, management, finance etc.

Special Tracks

	HSSE-I		HSSE-II		HSSE-III
HSE11	Law for Engineers-I	HSE12	Law for Engineers-II	HSE13	Law for Engineers-III
HSE21	Finance for Engineers-I	HSE22	Finance for Engineers-II	HSE23	Finance for Engineers-III
HSE31	Psychology-I	HSE32	Psychology-II	HSE33	Psychology-III
HSE41	Economics-I	HSE42	Economics-II	HSE43	Economics-III
HSE51	Ancient India	HSE52	Medieval India	HSE53	Modern India
HSE6X1	Language X-I	HSE6X2	Language X-II	HSE6X3	Language X-III

Common Pool for HSE-I, II and III (May be studied on MOOC's)

HSEC01	Film Appreciation	HSEC02	Universal Values
HSEC03	Game Theory	HSEC04	Human Behavior
HSEC05	Ecology and Society	HSEC06	Energy Economics and Policies
HSEC07	Drama Appreciation	HSEC08	Political Ideologies
HSEC09	Justice	HSECXX	Any other Approved Course
HSEXX	Any course from HSSE-I		

Activity Based Liberal Learning about Life, Literature and Culture (ABLL@LLC)

“Education will fail ignominiously in its objective if it manufactures only a robot and called him an economic man stressing the adjective economic and forgetting the substantive man. A university cannot afford to ignore the cultural aspects of education whatever studies it specializes in. Science is a means, not an end. Whereas culture is an end in itself. Even though you may ultimately become a scientist, a doctor, or an engineer, you must, while in college, absorb fundamental values which will make you a man of culture..”

Kulpati Dr. K. M. Munshi

How aptly our visionary founder has given direction to the education. His wisdom towards education inspires, encourages us to experiment in the field of education, to make it as relevant and helpful to the society as possible. Mahatma Gandhi once quoted, *“By education I mean an all-round drawing out of the best in man; body, mind and spirit.”*

Recently announced National Policy on Education-2019, reconfirms this and profoundly stresses the need of liberalizing the higher education including professional education. It quotes, *“Higher education must develop good, well-rounded and creative individuals, with intellectual curiosity, spirit of service and a strong ethical compass”*. Moving towards a more liberal undergraduate education is one of the most important features of this policy. It narrates, *“The needs of the 21st century require that liberal broad-based multidisciplinary education become the basis for all higher education. This will help develop well-rounded individuals that possess critical 21st century capacities in fields across arts, humanities, sciences, social sciences, and professional, technical, and vocational crafts, an ethic of social engagement, and rigorous specialization in a chosen field or fields. Such a liberal education would be, in the long run, the approach across all undergraduate programs, including those in professional, technical, and vocational disciplines. Imaginative and flexible curricular structures will enable creative combinations of disciplines for students to study, thus demolishing currently prevalent rigid boundaries and creating new possibilities for lifelong learning. The notion of ‘knowledge of many arts’- i.e. what is called ‘liberal arts’ in modern times – must be brought back to Indian education, as it is exactly the kind of education that will be required for the 21st century.”*

We at Bhavan’s SPIT, make sincere attempt to blend engineering education appropriately with arts, humanities, crafts, ethic of personal and social engagement to ensure holistic development of the learner. We have carefully designed liberal learning courses covering Life, Literature, and Culture (LLC @ LLC) for all the semesters of the program. Learner concurrently studies these courses. These courses broadly fall under two groups, namely “SEVA (Social Empowerment through Various Activities)” and “SATVA (Self Accomplishment through Various Activities)”. Each of these groups, has four modules as indicated in Table 1 and Table 2. Further each module has multiple courses of 1 or 2 credits (An engagement of 35-40 hours is expected to earn one credit). Every learner at SPIT is expected to take 1 such course on LLC every semester. We strongly believe that these EIGHT liberal learning modules will help us to appropriately blend the professional education as envisaged by the National Policy Makers.

Table 1: SEVA

SEVA (Social Empowerment through Various Activities)			
Module	Title	Courses	CODE
SEVA-I	SOCHO BHARAT	Study of Green & White Revolutions in India	SV10
		Government Missions [Study of any 2]	SV11
		Study of India's top 2 problems	SV12
		Study of World's top 2 problems	SV13
		How Government Works? [Study of one department of the Central/ State Government]	SV14
		Study of one of the identified Books	SV15
		Study of two National policies	SV16
		Any other activity approved by Dean Academics	SV1X
Module	Title	Courses	CODE
SEVA-II	SWACCH BHARAT	River/Beach/Mohalla/School/Campus/Govt offices Cleaning	SV20
		Waste Segregation Surveys	SV21
		NSS camp in village for a week	SV22
		Medical camps in schools	SV23
		First Aid training for a week	SV24
		Surveys and Estimation for roof top solar	SV25
		NCC participation	SV26
		Any activity approved by Dean Academics	SV2X
Module	Title	Courses	CODE
SEVA-III	SHIKSHIT BHARAT	Mentoring of School Children	SV30
		Digital Literacy for yielders	SV31
		Value addition for deprived schools	SV32
		Mentoring junior (first year) students at SPIT	SV33
		Teaching Assistantship at SPIT	SV34
		Development of learning material for schools/ITIs	SV35
		Participation in "Teach-for-India" movement	SV36
		Any other activity approved by Dean Academics	SV3X
Module	Title	Courses	CODE
SEVA-IV	SAMRUDDHA BHARAT	Great Grass Root Innovations	SV40
		Innovation and Creativity	SV41
		Critical Thinking and Problem solving	SV42
		Team work and collaboration	SV43
		Leadership & Entrepreneurship	SV44
		Design Thinking	SV45
		Study of one of the identified books	SV47
		Work with START-UP at SPIT	SV48
		Any other activity approved by Dean Academics	SV49

Table 2: SATVA

SATVA (Self Accomplishment Through Various Activities)			
Module	Title	Courses	CODE
SATVA-I	SANSKRIT BHARAT	Values and Ethos of Bhavan	ST10
		Essence of Indian traditional knowledge	ST11
		Philosophy of religion (any)	ST12
		Study of Life Management / Kindle Life / Life Empowerment and Enriching Program or any other book cited.	ST13
		Study of any of GREAT sons of INDIA [Ex. Gandhi, Ambedkar, Phule, Savarkar, Sardar Patel, Nehru, Shivaji, JRD Tata etc]	ST14
		Any other course approved by Dean Academics	ST1X
Module	Title	Courses	CODE
SATVA-II	SAKSHAM BHARAT	Target based Physical Exercise for example-Running [Test 5 kms in a stretch], Swimming [Test 1 km in a stretch], Walking [Test 20 kms in a stretch], Trekking [7days], Cycling	ST20
		Sports – Representation of Institute at University level/Inter college level and above in ANY sport	ST21
		Participation in National Tech Fest, AICTE-Hackathon, Industry floated global and national competitions, Robocon, BAHA etc	ST22
		Yoga vidya -I	ST23
		Any other activity approved by Dean Academics	ST2X
Module	Title	Courses	CODE
SATVA-III	SUNDER BHARAT	Institute representation in prestigious cultural fests/competitions	ST30
		Dance [Bharatanatyam /Kathak /Lavani /Western Dance]. Only for beginners	ST31
		Learning musical instrument [Any type]. Only for beginners.	ST32
		Film Appreciation/Dramatics/Seeing through Painting	ST33
		Making short film/Photography	ST34
		Yogvidya-II	ST35
		Any other activity approved by Dean Academics and DOSA	ST3X
Module	Title	Courses	CODE
SATVA-IV	SURAKSHIT BHARAT	Food that Heals	ST40
		Personal and Social Hygiene	ST41
		Intellectual Property Rights	ST42
		Etiquette and Conversational skills	ST43
		Basics of Ayurveda	ST44
		Study of one of the identified Books	ST45
		Any other course approved by Dean Academics	ST4X