THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY

Autonomous College Affiliated to University of Mumbai
Approved by All India Council for Technical Education(AICTE) and Government of Maharashtra(GoM)
Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y 2019-20
Amongst Top 200 Colleges in the Country, Ranked 193rd in NIRF India Ranking 2019 in Engineering College category
• ISO 9001:2015 Certified • Programmes Accredited by National Board of Accreditation (NBA), New Delhi
• Institute Accredited by National Assessment and Accreditation Council (NAAC), Bangalore

Estd. in 2001

Semester-I / B.Tech. (AIML)
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2020-21)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR / OR	TW	Total
		Course Description	**Teaching Scheme (Academic)** — Modes of Teaching / Learning / Weightage — Hours Per Week					**Examination scheme (Academic)** — Modes of Continuous Assessment /Evaluation — Theory (100/50) 40/20	IA 60/30		Practical/Oral/ Presentation (25)	Term Work (25)	
1	BSC102	Chemistry	3	1	2	6	5	20	20	60	25	25	150
2	BSC103	Mathematics-I	4	1	-	5	5	20	20	60	-	25	125
3	ESC103	Programming for Problem Solving	3	-	2	5	4	20	20	60	25	25	150
4	ESC102	Engineering Graphics & Design	2	-	4	6	4	20	20	60	25	25	150
5	ESC105	Workshop/Manufacturing Practices-I	1	-	2	3	2	10	10	30	25	-	75
		Total	**13**	**2**	**10**	**25**	**20**	**Total marks (Academic)**					**650**

Sr.	Course Code	Course Description	Non-Credit Mandatory Course (Passing is mandatory for this course)						Term Work	
1	MC101	Induction Training Program	2	-	-	2	(Non-credit)	-	25	**25**

Sr.	Course Code	Course Description		Contact Hrs. During Week End / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester					
1	SI101	Summer Internship	Internship will be conducted in the semester break	120*	-		-		-

Sr.	Course Code	Course Description		Contact Hrs. During Week End / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester					
1	AP101	Activity Points	-	48@	-		-	-	-

Sr.	Course Code	Course Description	Teaching scheme (Holistic and Multidisciplinary Education - HME)					Presentation			Report	TermWork
1	HME-PS 101	Professional Skills-II (Aptitude / Logic Building)	-	-	2	2	1	-	-	-	50	25	75
2	HME- ABL 101	Activity Based Learning-I (Yoga Practice & Society Outreach-I)	-	-	2	2	1	-	-	-	50	25	75
		Total	**-**	**-**	**4**	**4**	**2**	**Total marks (HME)**					**150**
		Total	**15**	**2**	**14**	**29 + 2 = 31**	**22**	**Grand Total marks:**					**825**

Zugbe Singh Charitable Trust's (Regd.)

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Website : www.tcetmumbai.in

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1. Student Induction Training program shall be conducted for one week before the start of first semester and 2 weeks during the semester with regular timetable.
2. During Academic conduct, practical load shall be conducted in batches.
3. For continuous evaluation, examination shall be conducted under two heads: IA – In-Semester Assessment, ESE – End Semester Examination. Under IA,20 marks of ISE (In-Semester Examination) shall be conducted for 1 hour and for 10 marks, 45 minutes shall be allotted. 20/10 marks of IE (Innovative Examination) shall also be conducted under IA. ESE shall be conducted for 60 marks with duration of 2 hours and for 30 marks of ESE shall be conductedwith duration of 1 hour.
4. Professional Skills-II and Activity Based Learning-I activities will run in the form of integrated theory and practical course.
5. * Under the head of Summer Internship, student can complete internship from winter to summer with 120 hours and acquire 3 credits till the end of SecondSemester. Credits will be reflected in the Grade Card of Second Semester. Student will get 1-year span to acquire the credits and complete total contact hours. Student shall submit a report to earn Term work marks in internship.
6. Other activities shall also be considered are: Workshop/ Training, Festival (Technical/Business/Others) Events, Contribution in Incubation/ Innovation / Entrepreneurship Cell/ Institutional Innovation Council, Learning at Departmental Lab/Tinkering lab/Institutional Workshop.
7. For Above Activities mentioned in point 6, if s tudent is a part of Organizing Committee or participating i n a Competition at University/ State/ National/ International Level then it will be considered as Internship else it will be considered as Activity Points.
8. @ As per AICTE, Student has to earn 100 Activity Points by participating in 400 Hrs. of activities during 4 years of Engineering. After completing 48 hrs.of Activities, Students can earn 12 Points. These Points shall not be reflected in Grade Card. Separate transcript shall be issued to students after completionof Final Year.
9. # There is an introduction of new course named Mechanical and Mechatronics Engineering (MME) (Additive Manufacturing) which is applied to AICTEfor approval process.

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Semester-II / B.Tech. (AIML)
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2020-21)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR / OR	TW	Total
		Course Description	**Teaching Scheme (Academic)** / **Modes of Teaching / Learning / Weightage** / **Hours Per Week**					**Examination scheme (Academic)** / **Modes of Continuous Assessment / Evaluation**					
			Hours Per Week					**Theory (100/50)**			**Practical/Oral/ Presentation (25)**	**Term Work (25)**	
								40/20		**60/30**			
								IA		**ESE**	**PR / OR**	**TW**	
1	BSC101	Physics	3	1	2	6	5	20	20	60	25	25	150
2	BSC104	Mathematics-II	3	1	-	4	4	20	20	60	-	25	125
3	ESC101	Basic Electrical Engineering	3	1	2	6	5	20	20	60	25	25	150
4	ESC104	Engineering Mechanics	3	-	2	5	4	20	20	60	25	25	150
5	ESC106	Workshop/Manufacturing Practices-II	-	-	2	2	1	-	-	-	25	-	25
6	HSMC101	English for Professional Communication	2	-	2	4	3	20	20	60	25	-	125
		Total	**14**	**3**	**10**	**27**	**22**	**Total marks (Academic)**					**725**

	Course Description		Conduction Scheme		Presentation	Report	Term Work
1	SI201	Summer Internship	Internship will be conducted in thesemester break	**120*** **3***	10	15	**25**

	Course Description		Contact Hrs. During Week End / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester				
1	AP201	Activity Points		**52@** -	-	-	-

	Course Description		Teaching scheme (Holistic and Multidisciplinary Education - HME)					Presentation	Report	Term Work
1	HME-PS201	Professional Skills-I (Life / Presentation Skills)	-	-	2	2	1	-	-	-	50	25	75
2	HME-ABL201	Activity Based Learning- II (Yoga Practice& Society Outreach-II)	-	-	2	2	1	-	-	-	50	25	75
		Total	**-**	**-**	**4**	**4**	**2**	**Total marks (HME)**					**150**
		Total	**14**	**3**	**14**	**31**	**27**	**Grand Total marks:**					**900**

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1. During Academic conduct, practical load shall be conducted in batches.
2. For continuous evaluation, examination shall be conducted under two heads: IA – In-Semester Assessment, ESE – End Semester Examination. Under IA, 20 marks of ISE (In-Semester Examination) shall be conducted for 1 hour. 20 marks of IE (Innovative Examination) shall also be conducted under IA. ESE shall be conducted for 60 marks with duration of 2 hours.
3. Professional Skills-I and Activity Based Learning-II activities will run in the form of integrated theory and practical course.
4. * Under the head of Summer Internship, student can complete internship from winter to summer with 120 hours and acquire 3 credits till the end of Second Semester. The summer Internship will be conducted in the form of in-house internship which is mandatory for all students in summer semester break. Credits will be reflected in the Grade Card of Second Semester. Student will get 1-year span to acquire the credits and complete total contact hours. Student shall submit a report to earn Term work marks in internship.
5. Other activities shall also be considered are: Workshop/ Training, Festival (Technical/Business/Others) Events, Contribution in Incubation/ Innovation / Entrepreneurship Cell/ Institutional Innovation Council, Learning at Departmental Lab/Tinkering lab/Institutional Workshop.
6. For Above Activities mentioned in point 6, if s tudent is a part of Organizing Committee or participating in a Competition at University/ State/ National/ International Level then it will be considered as Internship else it will be considered as Activity Points.
7. @ As per AICTE, Student has to earn 100 Activity Points by participating in 400 Hrs. of activities during 4 years of Engineering. After completing 52 hours of Activities, students can earn 13 Points. These Points shall not be reflected in Grade Card. Separate transcript shall be issued to students after completion of Final Year.
8. # There is an introduction of new course named Mechanical and Mechatronics Engineering (MME) (Additive Manufacturing) which is applied toAICTE for approval process

TCET

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
Choice Based Credit Grading Scheme [CBCGS]
Under TCET Autonomy
University of Mumbai

S.T. Semester-III / B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2021-22)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR/OR	TW	Total
		Course Description						**20/40**					
								IA (40/20)		**ESE** (60/30)	**PR/OR**	**TW**	
1	BSC-AIML301	Statistics for Data Analysis	3	1	-	4	4	20	20	60	-	25	125
2	PCC -AIML301	Data Structures	3	-	2	5	4	20	20	60	25	25	150
3	PCC -AIML302	Database Management System	3	-	2	5	4	20	20	60	25	25	150
4	PCC -AIML303	Operating System	3	-	2	5	4	20	20	60	25	25	150
5	PCC -AIML304	Computer Networks	3	-	2	5	4	20	20	60	25	25	150
		Total	15	01	08	24	20			Total Marks (Academic)			725

Non-Credited Mandatory Course (Passing is mandatory for this course)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits					TW	Total
1	MC-AIML301	Environmental Studies	1	-	-	1	(Non-Credit)		-				25	25

Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits					TW	Total
1	SI-AIML301	Summer Internship	-	-	-	160*	-		- ||	-	-	-

Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits						Total
1	AP-AIML301	Activity Points	-	-	-	48@	-		- ||	-	-	-

Teaching scheme (Holistic and Multidisciplinary Education -HME)
(Conducted in the beginning of Semester during first 3 Weeks)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	Presentation (AC)		Report (AC)		Term Work	
1	ESD-AIML301	Employability Skill Development-I	-	-	30	30	1	Based on Parameters Decided by Training and Placement Cell					50
2	HME - AIMLPS301	Professional Skills III (Core Python)	15	-	30	45	2	50			25		75
3	HME– AIMLPBL301	Project Based Learning-I	-	-	30	30	1	25			-		25
4	HME-AIMLABL301	Activity Based Learning III (Co-curricular/Extra-curricular)	-	-	30	30	1	25			25		50
		Total	15	-	120	135	5	Total Marks (HME)					200
		Total					25	Grand Total marks:					950

IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, AC- Activity evaluation

1. Academic practical load shall be conducted in batches.
2. IA – In-Semester Assessment, ESE – End Semester Examination and under IA, 20 marks of ISE (In-Semester Examination) will be conducted for 1 hour and 20 marks of IE (Innovative Examination) whereas, 60 marks of ESE will be conducted for 2 hours. Out of 3 IA, best 2 will be considered.
3. Professional Skills-I and Project Based Learning-III activities will run in the form of integrated theory and practical course.
4. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

   *These are minimum credits which students should acquire as part of summer internship. Students may go upto 240 hrs. to acquire maximum 6 credits.

Total hrs. mentioned should be completed till end of Semester 6. Credits will be awarded at the end of 6th Semester and will be reflected in the Marksheet of 6th Semester.

Student will get 1-year span to acquire the credits. Students should collectively acquire total contact hrs in below given activities in a span of 1 year. Student will submit a report to earn Term work marks in internship.

   Following activities should be considered for Summer Internship: -

1) Participation in internship at the end of 5th and 6th Semester of 2 week each.

2) Other activity which also will be considered are: Participation in Hackathon, Development of new Product/ Business Plan / Registration of start-up, Participation in IPR workshop/Leadership talks/Idea/ Design / Innovation/Technical Expos, Internship with Industry / Govt. / NGO/ PSU/MSME/Online Internship, Long Term Goals under Rural Internship.

Note: - In Above Activities mentioned in point 2, if Student is part of Organizing Committee, then it will be considered as Internship else it will be considered as Activity Points.

As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 48 hrs. of Activities, Students can earn 12 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.

S.T. Semester-IV/ B. Tech.Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2021-22)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	IA ISE	IA IE	ESE IE	PR/OR	TW	Total
	Course Description		Teaching Scheme (Program Specific) — Mode of Teaching /Learning/Weightage — Hours Per Week					Examination Scheme (Academic) — Modes of Continuous Assessment/Evaluation — Theory (100/50)			Practical/ Oral/Presentation (25)	Term Work (25)	
								40/20		60/30			
1	BSC-AIML401	Statistical Decision Making	3	1	-	4	4	20	20	60	-	25	125
2	PCC–AIML401	Design and Analysis of Algorithms	3	-	2	5	4	20	20	60	25	25	150
3	PCC -AIML402	Basics of Artificial Intelligence	3	-	2	5	4	20	20	60	25	25	150
4	PCC -AIML403	Data Mining and Business Visualization	3	-	2	5	4	20	20	60	25	25	150
5	PCC -AIML404	Computer Organization and Microprocessor	3	-	2	5	4	20	20	60	25	25	150
		Total	15	01	08	24	20				Total Marks (Academic)		725

	Course Description		Non-Credited Mandatory Course (Passing is mandatory for this course)						Term Work	
1	MC -AIML401	Value Education	1	-	-	1	(Non-Credit)	-	25	25

	Course Description		Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)						Non-Grant Term Work based on the Presentation and Report	
1	SI-AIML401	Summer Internship	-	-	-	160*	4	-	50	50

	Course Description		Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester							
1	AP-AIML401	Activity Points	-	-	52@		-	-	-	-

Sr. No.	Course Code	Course Title	Teaching scheme (Holistic and Multidisciplinary Education -HME) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme — Presentation AC	Report AC	Term Work
1.	ESD-AIML401	Employability Skill Development-II	-	-	30	30	1	Based on Parameters Decided by Training and Placement Cell		50
2.	HME–AIMLPS401	Professional Skills IV (Web Programming)	15	-	30	45	2	50	25	75
3.	HME–AIMLPBL401	Project Based Learning II	-	-	30	30	1	25	-	25
4.	HME–AIMLABL401	Activity Based Learning IV (Co-curricular OR Extra-curricular)	-	-	30	30	1	25	25	50
		Total	15	-	120	135	5	Total marks (HME)		200
		Total					29	Grand Total marks:		1000

IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, AC- Activity evaluation, ISE-In-Semester Examinations, IE-Innovative Examination

1. Academic practical load shall be conducted in batches.

2. IA – In-Semester Assessment, ESE – End Semester Examination and under IA, 20 marks of ISE (In-Semester Examination) will be conducted for 1 hour and 20 marks of IE (Innovative Examination) whereas, 60 marks of ESE will be conducted for 2 hours. Out of 3 IA, best 2 will be considered.

3. Professional Skills-I and Project Based Learning-III activities will run in the form of integrated theory and practical course.

4. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

*These are minimum credits which students should acquire as part of summer internship. Students may go upto 240 hrs. to acquire maximum 6 credits.

Total hrs. mentioned should be completed till end of Semester 6. Credits will be awarded at the end of 6th Semester and will be reflected in the Marksheet of 6th Semester.

Student will get 1-year span to acquire the credits. Students should collectively acquire total contact hrs in below given activities in a span of 1 year.

Student will submit a report to earn Term work marks in internship.

Following activities should be considered for Summer Internship: -

1) Participation in internship at the end of 5th and 6th Semester of 2 week each.

2) Other activity which also will be considered are: Participation in Hackathon, Development of new Product/ Business Plan / Registration of start-up, Participation in IPR workshop/Leadership talks/Idea/ Design / Innovation/Technical Expos, Internship with Industry / Govt. / NGO/ PSU/MSME/Online Internship, Long Term Goals under Rural Internship.

Note: - In Above Activities mentioned in point 2, if Student is part of Organizing Committee, then it will be considered as Internship else it will be considered as Activity Points.

As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 48 hrs. of Activities, Students can earn 12 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.

T.T. Semester-V/ B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2022-23)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR/OR	TW	Total
			Course Description			**Teaching Scheme (Program Specific)**				**Examination Scheme (Academic)**			
				Mode of Teaching /Learning/Weightage						**Modes of Continuous Assessment/Evaluation**			
				Hours Per Week			**Credits**	**Theory (100/50)**			**Practical/ Oral/Presentation (25)**	**Term Work (25)**	**Total**
								40/20		**60/30**			
								IA					
			Theory	**Tutorial**	**Practical**	**Contact Hours**		**ISE**	**IE**	**ESE**	**PR/OR**	**TW**	
1	HSMC-AIML 501	Soft Skills and Interpersonal Communication	3	-	-	3	3	20	20	60	-	-	100
2	PCC -AIML501	Automata Theory	3	1	-	4	4	20	20	60	-	25	125
3	PCC-AIML502	Software Engineering with Devops	3	-	2	5	4	20	20	60	25	25	150
4	PCC -AIML503	Fundamentals of Machine learning	3	-	2	5	4	20	20	60	25	25	150
5	PEC -AIML501X	Professional Elective-I	3	-	2@	5	4	20	20	60	25	25	150
		Total	**15**	**1**	**6**	**22**	**19**				**Total Marks (Academic)**		**675**

Sr.	Course Code	Course Title					Credits					TW	
		Course Description	**Non-Credited Mandatory Course (Passing is mandatory for this course)**									**Term Work**	
1	MC -AIML501	Indian constitution	1	-	-	1	(Non-Credit)	-				25	**25**
		Course Description	**Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)**										
1	SI-AIML501	Summer Internship	-	-	-	160* - 240*	-	-				-	**-**
		Course Description	**Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester**										
1	AP-AIML501	Activity Points	-	-	-	48#	-	-				-	**-**

	Course Description		Teaching scheme (Holistic and Multidisciplinary Education -HME) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme			Term Work
								Presentation	**Report**		
								AC	**AC**		
1.	ESD -AIML501	Employability Skill Development-III	-	-	30	30	1	Based on Parameters Decided by Training and Placement Cell			50
2.	HME -AIMLPS501	Professional Skills (Advanced Python for Machine Learning)	15	-	30	45	2	50	25		75
3.	HME-AIMLPBL501	Project Based Learning-III	-	-	30	30	1	25	-		25
4.	HME-AIMLRBL501	Research Based Learning-I	-	-	30	30	1	25	25		50
		Total	**15**	**-**	**120**	**135**	**5**		**Total marks (HME)**		**200**
		Total					**24**		**Grand Total marks:**		**950**

Professional Elective I	
Course Code	**Course name**
PEC -AIML5011	Computer Graphics & Virtual Reality
PEC -AIML5012	Wireless Networks
PEC -AIML5013	Human Machine Interaction
PEC -AIML5014	NoSQL
PEC -AIML5015	Digital Signal &Image Processing

1. Academic practical load shall be conducted in batches.
2. IA – In-Semester Assessment, ESE – End Semester Examination and under IA, 20 marks of ISE (In-Semester Examination) will be conducted for 1 hour and 20 marks of IE (Innovative Examination) whereas, 60 marks of ESE will be conducted for 2 hours. Out of 3 IA, best 2 will be considered.
3. Professional Skills-I and Project Based Learning-III activities will run in the form of integrated theory and practical course.
4. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

   *These are minimum credits which students should acquire as part of summer internship. Students may go upto 240 hrs. to acquire maximum 6 credits.

Total hrs. mentioned should be completed till end of Semester 6. Credits will be awarded at the end of 6th Semester and will be reflected in the   Marksheet of 6th Semester.

Student will get 1-year span to acquire the credits. Students should collectively acquire total contact hrs in below given activities in a span of 1 year. Student will submit a report to earn Term work marks in internship.

   Following activities should be considered for Summer Internship: -

1) Participation in internship at the end of 5th and 6th Semester of 2 week each.
2) Other activity which also will be considered are: Participation in Hackathon, Development of new Product/ Business Plan / Registration of start-up, Participation in IPR workshop/Leadership talks/Idea/ Design / Innovation/Technical Expos, Internship with Industry / Govt. / NGO/ PSU/MSME/Online Internship, Long Term Goals under Rural Internship.

Note: - In Above Activities mentioned in point 2, if Student is part of Organizing Committee, then it will be considered as Internship else it will be considered as Activity Points.

As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 48 hrs. of Activities, Students can earn 12 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.

T.T. Semester-VI/ B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2022-23)

Sr. No.	Course Code	Course Title		Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR/OR	TW	Total
			Course Description	**Teaching Scheme (Program Specific)**					**Examination Scheme (Academic)**					
				Mode of Teaching /Learning/Weightage					**Modes of Continuous Assessment/Evaluation**					
				Hours Per Week				Credits	**Theory (100/50)**			Practical/ Oral/Presentation (25)	**Term Work (25)**	Total
									40/20		60/30			
									IA		ESE			
				Theory	Tutorial	Practical	Contact Hours		ISE	IE		PR/OR	TW	
1.	PCC- AIML601	Soft Computing		3	-	2	5	4	20	20	60	25	25	150
2.	PCC- AIML602	Reinforcement learning		3	-	2	5	4	20	20	60	25	25	150
3.	PCC -AIML603	Cognitive Computing		3	1	2	6	5	20	20	60	25	25	150
4.	PEC- AIML601X	Professional Elective II		3	-	2@	5	4	20	20	60	25	25	150
5.	OEC-AIML601X	Open Elective-I		3	-	-	3	3	20	20	60	-	-	100
		Total		**15**	**01**	**06**	**24**	**20**				**Total Marks (Academic)**		**700**

	Course Code	Course Title	**Course Description**	**Non-Credited Mandatory Course (Passing is mandatory for this course)**									**Term Work**	
1	MC-AIML601	Essence of Indian Tradition Knowledge		**1**	**-**	**-**	**1**	(Non-Credit)			-		25	**25**

			Course Description	**Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)**									**Non-Grant Term Work based on the Presentation and Report**	
1	SI-AIML601	Summer Internship		-	-	-	160* - 240*	4*- 6*		-		-	50	**50**

			Course Description	**Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester**										
1	AP-AIML601	Activity Points		-	-	**-**	52#	-		**-**		**-**	-	-

Sr. No.	Course Code	Course Title	**Course Description**	**Teaching scheme (Holistic and Multidisciplinary Education -HME) (Conducted in the beginning of Semester during first 3 Weeks)**					**Assessment/Evaluation Scheme**				**Term Work**	
									Presentation		**Report**			
									AC		AC			
1.	ESD-AIML601	Employability Skill Development-IV		-	-	30	30	1	Based on Parameters Decided by Training and Placement Cell					50
2.	HME –AIMLPS601	Professional Skills VI (Tensorflow & PyTorch)		15	-	30	45	2	50		25			75
3.	HME- AIMLPBL601	Project Based Learning IV		-	-	30	30	1	25		-			25
4.	HME- AIMLRBL601	Research Based Learning II		-	-	30	30	1	25		25			50
		Total		**15**	**-**	**120**	**165**	**5**				**Total marks (HME)**		**200**
		Total						**29**				**Grand Total marks:**		**975**

Professional Elective II			Open Elective I		
Threads	Subject Code	Name	Subject Code	Name
AI	PEC- AIML6011	High Performance Computing	OEC-AIML6011	Digital Marketing
	PEC- AIML6012	Advanced Internet Programming	OEC-AIML6012	Software Process Automation
	PEC- AIML6013	Computer Vision	OEC-AIML6013	Entrepreneurship Development and Management
ML	PEC- AIML6014	Information Security	OEC-AIML6014	Cyber Security and Laws
	PEC- AIML6015	Big data analytics	OEC-AIML6015	Reliability Engineering
			OEC-AIML6016	Product life cycle management

IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, AC- Activity evaluation

Guidelines for the Semester:

1. During Academic conduct, practical load shall be conducted in batches.

2. For continuous evaluation, examination shall be conducted under two heads: IA – In-Semester Assessment, ESE – End Semester Examination. Under IA, 20 marks of ISE (In-Semester Examination) shall be conducted for 1 hour. 20 marks of IE (Innovative Examination) shall also be conducted under IA. ESE shall be conducted for 60 marks with duration of 2 hours.

3. Three In-Semester Examinations (ISE) will be conducted during each semester. Out of Three, Average of Best Two ISE marks will be considered. There is no provision for the Retest in any ISE.

4. Innovative Examination (IE) will be accessed based on the project report with presentation.

5. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

6. Professional Skills-VI and Project Based Learning-IV activities will run in the form of integrated theory and practical course.

7. * Under the head of Summer Internship, student can complete internship from winter to summer with 160 hours and acquire 4 credits till the end of Semester 6. The summer Internship will be conducted in the form of in-house internship which is mandatory for all students in summer semester break. Credits will be awarded at the end of 6th Semester and will be reflected in the Grade Card of 6th Semester. Student will get 1-year span to acquire the credits and complete total contact hours. Student shall submit a report to earn Term work marks in internship.

● **Following activities should be considered for Summer Internship: -**

1) Participation in outhouse internship at the end of 5th and 6th Semester of 160* - 240*hrs.

2) Other activity which also will be considered are: Participation in Hackathon, Development of new Product/ Business Plan / Registration of start-up, Participation in IPR workshop/Leadership talks/Idea/ Design / Innovation/Technical Expos, Internship with Industry / Govt. / NGO/ PSU/MSME/Online Internship, Long Term Goals under Rural Internship

Note:- For Above Activities mentioned in point 2, if Student is part of Organizing Committee or Participating a Competition at University/State/National/international Level then it will be considered as Internship else it will be considered as Activity Points.

8. # As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 48 hrs. of Activities, Students can earn 12 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.

B. Tech. Semester-VII/ B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR/OR	TW	Total
		Course Description	**Teaching Scheme (Program Specific)** — Mode of Teaching /Learning/Weightage — Hours Per Week					**Examination Scheme (Academic)** — Modes of Continuous Assessment/Evaluation — Theory (100/50) 40/20 IA / 60/30 ESE			Practical/Oral/Presentation (25)	Term Work (25)	
1	PCC- AIML701	Natural Language Processing	3	-	2	5	4	20	20	60	25	25	150
2	PEC -AIML701X	Professional Elective -III	3	-	2@	5	4	20	20	60	25	25	150
3	PEC –AIML702X	Professional Elective-IV	3	-	2@	5	4	20	20	60	25	25	150
4	OEC-AIML701X	Open Elective-II	3	-	-	3	3	20	20	60	-	-	100
5	HSMC-AIML701	Finance Management	3	-	-	3	3	20	20	60	-	-	100
6	PROJ-AIML701	Project-I	-	-	6	6	3	-	-		25	25	50
		Total	**15**		**12**	**27**	**21**				**Total Marks (Academic)**		**700**

	Course Description		Contact Hrs. during Semester Break/ End of Semester (Between 21st and 25th Week)					Term Work	
1	SI-AIML701	Summer Internship	-	-	-	120 *-160*	-	-	-	-

	Course Description		Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester						
1	AP-AIML701	Activity Points	-	-	-	48#	-		-	-	-

	Course Description		Teaching scheme (Holistic and Multidisciplinary Education -HME) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme — Presentation AC	Report AC	Term Work
1	HME –AIMLPS701	Professional Skills VII(Cloud Computing)	15	-	30	45	2	50	25	75
2	HME – AIMLRBL701	Research Based Learning III	-	-	30	30	1	25	25	50
		Total	**15**	**-**	**60**	**75**	**3**	**Total marks (HME)**		**725**
		Total					**24**	**Grand Total marks:**		**825**

Professional Elective-III			Professional Elective IV		Open Elective II	
Sectors	**Subject Code**	**Name**	**Subject Code**	**Name**	**Subject Code**	**Name**
Healthcare	PEC-AIML7011	AI&ML in Healthcare	PEC -AIML7021	Soft Computing and Computer Vision in Medical Diagnosis	OEC –AIML7011	Management Information System
Agritech	PEC-AIML7012	AI&ML in Agritech	PEC -AIML7022	Prediction Analysis & IoT in Agro	OEC –AIML7012	Human Resource Management
Security	PEC-AIML7013	AI&ML in Cyber Security	PEC -AIML7023	AI in BlockChain	OEC –AIML7013	Design Thinking and Problem Solving
Gaming	PEC-AIML7014	Game Programming	PEC -AIML7024	3D Graphics and Animation	OEC –AIML7014	Disaster management and mitigation measures
Societal Benefits	PEC-AIML7015	Explainable AI	PEC -AIML7025	Social Media Analytics	OEC –AIML7015	Research Methodology
					OEC –AIML7016	Operation Research

 IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, AC- Activity evaluation

Guidelines for the Semester:
Semester Conduct:
1. The Academic year will be conducted through two semesters. Odd Semester (1st July-31st December) and Even Semester (1st January-30th June).
2. The credit calculation is
   a) Theory/Tutorial:1 credit=1 hr b) Practical: 1 credit =2 hrs c) Experiential Learning/Internship: 1 credit= 40 hrs
   d) Professional skills: 1 credit =2 hrs e) Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs
3. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project
4. During Academic conduct, practical load shall be conducted in batches.

Evaluation and Assessment:
5. For continuous evaluation, examination shall be conducted under two heads: IA – In-Semester Assessment, ESE – End Semester Examination. Under IA, 20 marks of ISE (In-Semester Examination) shall be conducted for 1 hour. 20 marks of IE (Innovative Learning with Examination) shall also be conducted under IA. ESE shall be conducted for 60 marks with duration of 2 hours.
6. Evaluation and assessment will be formative and summative.
7. Two In semester Examination ISE-I and II (3 modules each) will be summative.
8. One In Semester Examination, ISE-III and Innovative learning with Examination-IE will be formative.
9. End semester Examination, ESE will be Summative and Term Work and Oral/Practical exam and ESE will be conducted at the end of semester.

Internship:
10. * The summer Internship will be conducted in the form of in-house/outhouse internship which is mandatory for all students in semester break.
    The internship credits accumulated will be credited in even semester.

AICTE 100 Activity Points:
11. # As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 48 hrs. of Activities, Students can earn 12 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.
    Other activity which also will be considered are: Participation in Hackathon, Development of new Product/ Business Plan / Registration of start-up, Participation in IPR workshop/Leadership talks/Idea/ Design / Innovation/Technical Expos, Internship with Industry / Govt. / NGO/ PSU/MSME/Online Internship, Long Term Goals under Rural Internship

B. Tech. Semester-VIII/ B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2020)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)

Sr. No.	Course Code	Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	ISE	IE	ESE	PR/OR	TW	Total
		Course Description	**Mode of Teaching /Learning/Weightage — Hours Per Week**					**Theory (100/50) 40/20 IA**		**60/30 ESE**	**Practical/ Oral/Presentation (25)**	**Term Work (25)**	**Total**
1	PCC -AIML801	Deep Learning	3	-	2	5	4	20	20	60	25	25	150
2	PEC -AIML801X	Professional Elective V	3	-	2@	5	4	20	20	60	25	25	150
3	OEC –AIML801X	Open Elective-III	3	-	-	3	3	20	20	60	-	-	100
4	OEC -AIML802X	Open Elective-IV	3	-	-	3	3	20	20	60	-	-	100
5	PROJ-AIML801	Project II	-	-	12	12	6	-	-		100	50	150
		Total	**12**	**-**	**16**	**28**	**20**				**Total Marks (Academic)**		**650**

	Course Description			Contact Hrs. during Semester Break/ End of Semester (Between 21st and 25th Week)		Non-Grant Term Work based on the Presentation and Report	-
1	SI-AIML801	Summer Internship	-	-	-	120*	3*-4*	-	50	**50**

	Course Description			Contact Hrs. during Weekend / Semester Break/ End of Semester (Between 21st and 25th Week)/During Semester			-
1	AP-AIML801	Activity Points	-	-	-	52#	-	-	-

Sr.	Course Description	Course Title	Theory scheme (Holistic and Multidisciplinary Education - HME) (Conducted in the beginning of Semester during first 3 Weeks)				Credits	Presentation AC	Report AC	Term Work
1	HME – AIMLPS801	Professional Skills VIII (R Programming)	15	-	30	45	2	50	25	75
2	HME–AIMLRBL801	Research Based Learning IV	-	-	30	30	1	25	25	50
		Total	**15**	**-**	**60**	**75**	**3**		**Total marks (HME)**	**125**
		Total					**26**		**Grand Total Marks:**	**825**

	Professional Elective-V		Open Elective III		Open Elective IV	
Sectors	Subject Code	Name	Subject Code	Name	Subject Code	Name
Healthcare	PEC-AIML8011	Intelligent Embedded System	OEC –AIMLC8011	Project Management	OEC -AIMLC8021	Managerial Economics
Agritech	PEC-AIML8012	Intelligent Robot and Drone Technology	OEC –AIMLC8012	Energy Audit and Management	OEC -AIMLC8022	Digital Business Management
Security	PEC-AIML8013	Bioinformatics	OEC –AIMLC8013	Innovation Management	OEC -AIMLC8023	Social Network Analysis
Gaming	PEC-AIML8014	Game Engine and Architecture	OEC –AIMLC8014	Environment management	OEC -AIMLC8024	Basic Taxation for Engineers
Societal Benefits	PEC-AIML8015	Generative AI	OEC –AIMLC8015	Intellectual Property Rights (IPR) & Patenting	OEC -AIMLC8025	Product Design and Development
			OEC –AIMLC8016	Supply Chain Management	OEC -AIMLC8026	Development Engineering

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2. The credit calculation is
   1. Theory/Tutorial:1 credit=1 hr b) Practical: 1 credit =2 hrs c) Experiential Learning/Internship: 1 credit= 40 hrs
   d) Professional skills: 1 credit =2 hrs e)Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs
3. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project
4. During Academic conduct, practical load shall be conducted in batches.

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