



TCET
DEPARTMENT OF ENGINEERING SCIENCES AND HUMANITIES (ES&H)
 Choice Based Credit Grading System (CBCGS)
 Under TCET Autonomy



Semester-I / B.Tech. (AI&ML)
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education (CBCGS-HME 2023)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)

Course Description			Teaching Scheme (Academic)					Examination scheme (Academic)					
			Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation					
Sr. No.	Course Code	Course Title	Hours Per Week					Theory (100)		Practical/Oral/ Presentation (25)	Term Work (25)	Total	
						Contact Hours	Credits	40/20	60				
			Hours Per Week					IA		ESE	PR / OR		TW
			Theory	Tutorial	Practical			ISE	IE				
1	BSC1201	Chemistry	3	-	2	5	4	20	20	60	25	25	150
2	BSC1202	Mathematics-I	4	1	-	5	5	20	20	60	-	25	125
3	ESC1201	Programming for Problem-Solving@	3	-	2	5	4	20	20	60	25	25	150
4	ESC1202	Engineering Mechanics	3	-	2	5	4	20	20	60	25	25	150
5	ESC1203	Workshop & ManufacturingPractices-I	-	-	2	2	1	-	-	-	25	-	25
6	HSMC1201	Introduction to Indian Knowledge System	2	-	2	4	3	20	20	60	25	-	125
		Total	15	1	10	26	21	Total marks (Academic)					725
Course Description			Conduction Scheme					Presentation			Report	Term Work	
1	MC1201	Attitude & Aptitude Development-I	1	-	-	1	Non Credit	-			25	25	
2	HME-PS1201	Professional Skills-I (Object Oriented Programming)	-	-	2	2	1	15			10	25	
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21st and 25th Week) / During Semester										
1	AP1201	Activity Points	-			48#	-	-			-	-	
Total			16	1	12	29	22	Grand Total marks:					775

IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, ISE-In-Semester Examinations, IE- Innovative Learning with Examination.



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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 / Industry Practices / Industry Certification: 1 credit = 2 hrs
 - e) Holistic Development – Attitude and Aptitude Development - I / II: 1 credit = 1 hr
3. Professional Skill - I will run in the form of practical mode & syllabus linked with level 5 of NSQF.
4. @ Programming for Problem Solving is linked with syllabus of Certificate in Computer Applications [CCA] and mapped with NSQF level 5.
5. During Academic conduct, practical load shall be conducted in batches.

Evaluation and Assessment:

6. 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.
7. Evaluation and assessment will be formative and summative.
8. Two In semester Examination ISE-I and II (3 modules each) will be summative.
9. One In Semester Examination, ISE-III and Innovative learning with Examination-IE will be formative.
10. End semester Examination (ESE) will be Summative. Term Work, Oral/Practical exam and ESE will be conducted at the end of 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 activities 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



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DEPARTMENT OF ENGINEERING SCIENCES AND HUMANITIES (ES&H)
 Choice Based Credit Grading System (CBCGS)
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Semester-II / B.E. (IT/ MECH / E&TC / M&ME) / B.Tech. (AI&ML)
Choice-Based Credit Grading Scheme with Holistic and Multidisciplinary Education (CBCGS-HME 2023)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)

Course Description			Teaching Scheme (Academic)					Examination scheme (Academic)					
			Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation					
Sr. No .	Cours e Code	Course Title	Hours Per Week					Theory (100)		Practical/Oral/ Presentation (25)	Term Work (25)	Total	
						Contact Hours	Credits	40/20	60				
			Hours Per Week							IA			ESE
Theory	Tutorial	Practical	ISE	IE									
1	BSC2201	Physics	3	-	2	5	4	20	20	60	25	25	150
2	BSC2202	Mathematics-II	3	1	-	4	4	20	20	60	-	25	125
3	ESC2201	Basic ElectricalEngineering	3	-	2	5	4	20	20	60	25	25	150
4	ESC2202	Engineering Graphics& Design	2	-	4	6	4	20	20	60	25	25	150
5	ESC2203	Workshop & ManufacturingPractices-II	-	-	2	2	1	-	-	-	25	-	25
6	HSMC2201	English for General & Professional Communication	2	-	2	4	3	20	20	60	25	-	125
		Total	13	1	12	26	20	Total marks (Academic)					725
Course Description			Conduction Scheme					Presentation				Report	Term Work
1	SI2201	Summer Internship	Internship will be conducted during the semester break			40*	1	10				15	25
2	MC2201	Attitude & Aptitude Development-II	1	-	-	1	Non Credit	-				25	25
Course Description			Contact Hrs. During Week End / Semester Break/ End of Semester (Between 21st and 25thWeek)/During Semester										
1	AP2201	Activity Points	-			52#	-	-				-	-
Total			14	1	12	27	21	Grand Total marks:					775

IA- In-Semester Assessment, ESE- End Semester Examination, PR- Practical Examination, TW – Term Work Examination, OR- Oral Examination, ISE-In-Semester Examinations, IE- Innovative Learning with Examination.



TCET
DEPARTMENT OF ENGINEERING SCIENCES AND HUMANITIES (ES&H)
Choice Based Credit Grading System (CBCGS)
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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 / Industry Practices / Industry Certification: 1 credit = 2 hrs
 - e) Holistic Development – Attitude and Aptitude Development - I / II: 1 credit = 1 hr
3. During Academic conduct, practical load shall be conducted in batches.

Evaluation and Assessment:

4. 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.
5. Evaluation and assessment will be formative and summative.
6. Two In semester Examination ISE-I and II (3 modules each) will be summative.
7. One In Semester Examination, ISE-III and Innovative learning with Examination-IE will be formative.
8. End semester Examination (ESE) will be Summative. Term Work, Oral/Practical exam and ESE will be conducted at the end of semester.

Internship:

9. * The summer Internship will be conducted in the form of in-house internship which is mandatory for all students in semester break. The internship credits accumulated will be credited in even semester. The content of internship is mapped with NSQF level 5.

AICTE 100 Activity Points:

10. # As per AICTE, Students has to earn 100 Points by participating in 400 Hrs. of activities during 4 years of Engineering. After Completing 52 hrs. of Activities, Students can earn 13 Points. This Points will not be reflected in Grade Card. Separate transcript will be issued to students after completion of Final Year.
Other activities 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.



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

Course Description			Teaching Scheme (Program Specific)					Examination scheme					
Sr. No.	Course Code	Course Title	Modes 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	ESE	PR/OR	TW		
1	HSMC-301	Universal Human Values-II	2	1	-	3	3	20	20	60	-	25	125
2	BSC-AIML301	Mathematics-III	3	1	-	4	4	20	20	60	-	25	125
3	ESC-AIML301	Python Programming(Core and Advanced)	3	-	2	5	4	20	20	60	25	25	150
4	PCC-AIML301	Computer Organization and Operating System	3	-	2	5	4	20	20	60	25	25	150
5	PCC-AIML302	Data Structures and Algorithms Using JAVA	3	1	2	6	5	20	20	60	25	25	150
			14	3	6	23	20	Total marks (Academic)					700
Course Description			Non Credited Mandatory Course (Passing is mandatory for this course)									Term Work	
1	MC-301	Attitude & Aptitude Development 3	1	-	-	1	(Non Credit)	-			25	25	
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week)										
1	SI-AIML301	Summer Internship	-	-	-	120*	-	-	-	-	-	-	-
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week)/During Semester										
1	AP-AIML301	Activity Points	-	-	-	48#	-	-	-	-	-	-	-
Course Description			Teaching scheme (Holistic and Multidisciplinary Education-HME)					Assessment/Evaluation Scheme					
								Presentation		Report		Term Work	
								AC		AC			
1	HME - AIMLPS301	Professional Skills II (Data Quality Analysis)	-	-	2	2	1	15		10		25	
2	HME -IP301	Industry Practise-I (Employability Skills) Application Developer (HTML & CSS)	-	-	2	2	1	15		10		25	
		Total	-	-	4	4	2	Total marks (HME)					50
		Total	15	3	10	28	22	Grand Total marks					775



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

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/Industry Practices/Industry Certification: 1 credit =2 hrs e) Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs
3. Professional Skills & Industry Practice activity will run in the form of integrated theory and practical course & syllabus is linked with level 6 of NSQF.
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.
 - a) 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

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

Course Description			Teaching Scheme (Program Specific)					Examination scheme						
Sr. No.	Course Code	Course Title	Modes 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	BSC-AIIML401	Mathematics-IV	3	1	-	4	4	20	20	60	-	25	125	
2	PCC-AIIML401	Computer Networks and 5G Technologies	3	-	2	5	4	20	20	60	25	25	150	
3	PCC-AIIML402	Data Management and Mining	3	-	2	5	4	20	20	60	25	25	150	
4	PCC-AIIML403	Basics of Artificial Intelligence	3	-	2	5	4	20	20	60	25	25	150	
		Total	12	1	6	19	16	Total marks (Academic)						575
Course Description			Non-Credited Mandatory Course (Passing is mandatory for this course)									Term Work		
1	MC-401	Environmental Studies	1	-	-	1	(Non Credit)	-				25	25	
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester(Between 21 st and 25 th Week)									Term Work		
1	SI-AIIML401	Summer Internship	-	-	-	120*	3	-	-	-	50	50		
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week)/During Semester											
1	AP-AIIML401	Activity Points	-	-	-	52#	-	-						
Course Description			Teaching scheme (Holistic and Multidisciplinary Education-HME) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme						
								Presentation		Report		Term Work		
								AC		AC				
1	HME – AIIMLP5401	Professional Skills III (Data Quality Analysis)	-	-	2	2	1	15		10		25		
2	HME –IP401	Industry Practise-II (Employability Skills) Application Developer (Java Script/React)	-	-	2	2	1	15		10		25		
3	HME -ABL401	Activity Based Learning	-	-	2	2	1	15		10		25		
		Total	-	-	6	6	3	Total marks (HME)						75
		Total	13	1	12	26	22	Grand Total marks						725

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



TCET

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



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

Theory/Tutorial: 1 credit=1 hr b) Practical: 1 credit =2 hrs c) Experiential Learning/Internship: 1 credit= 40 hrs

d) Professional skills/Industry Practices/Industry Certification: 1 credit =2 hrs e) Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs

3. Professional Skills & Industry Practice activity will run in the form of integrated theory and practical course & syllabus is linked with level 6 of NSQF.
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



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

Course Description			Teaching Scheme (Program Specific)					Examination scheme						
Sr. No.	Course Code	Course Title	Modes 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-501	Soft Skill & Interpersonal Communication	2	-	2	4	3	20	20	60	-	-	100	
2	ESC-AIML501	Automata Theory and Compiler Design	3	1	-	4	4	20	20	60	25	25	150	
3	PCC-AIML501	Machine Learning	3	-	2	5	4	20	20	60	-	25	125	
4	PCC-AIML502	Web and App Development	3	-	2	5	4	20	20	60	25	25	150	
5	PCC-AIML503	Computer Vision	3	-	2	5	4	20	20	60	25	25	150	
		Total	15	1	6	22	19	Total marks (Academic)						675
Course Description			Non-Credited Mandatory Course (Passing is mandatory for this course)									Term Work		
1	MC-501	Indian Constitution	1	-	-	1	(Non-Credit)	-				25	25	
Course Description			Contact Hrs. during Semester Break/ End of Semester (Between 21 st and 25 th Week)											
1	SI-AIML501	Summer Internship	-	-	-	120*	-	-	-	-	-	-	-	
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th 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						
								Presentation		Report		Term Work		
								AC		AC				
1	HME – AIMLPS501	Professional Skills IV (Machine Learning Tools & Technologies)	-	-	2	2	1	15		10		25		
2	HME –IP501	Industry Practise-III(Employability Skills) Application Architect (Futuristic Web Development)	-	-	2	2	1	15		10		25		
3	HME –PBL501	Project Based Learning (Mini-Project)	-	-	2	2	1	15		10		25		
Total			-	-	6	6	3	Total marks (HME)						75
Total			16	1	12	29	22	Grand Total marks						775



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Choice Based Credit Grading Scheme [CBCGS]
Under TCET Autonomy
University of Mumbai



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/Industry Practices/Industry Certification: 1 credit =2 hrs e) Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs
3. Professional Skills & Industry Practice activity will run in the form of integrated theory and practical course & syllabus is linked with level 6 of NSQF.
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



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

Course Description			Teaching Scheme (Program Specific)					Examination scheme					
Sr. No.	Course Code	Course Title	Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation					
			Hours Per Week				Credits	Theory (100/50)		Practical / Oral / Presentation (25)	Term Work (25)	Total	
			Theory	Tutorial	Practical	Contact Hours		40/20		60/30	PR/OR		TW
								IA					
								ISE	IE				
1	HSMC-601	Workplace Mental Health	2	-	-	2	2	10	10	30	-	25	75
2	PCC-AIML601	Soft Computing	3	-	2	5	4	20	20	60	25	25	150
3	PCC-AIML602	Software Engineering	3	-	2	5	4	20	20	60	25	25	150
4	PEC- AIML601X	Professional Elective-I	3	-	-	3	3	20	20	60	-	25	125
5	OEC-601X	Open Elective-I	3	-	-	3	3	20	20	60	-	25	125
		Total	14	-	4	18	16	-		-	Total marks (Academic)		650
Course Description			Non-Credited Mandatory Course (Passing is mandatory for this course)									Term Work	
Course Description			Contact Hrs. during Semester Break/ End of Semester (Between 21 st and 25 th Week)									Term Work	
1	SI-AIML601	Summer Internship	-	-	-	120*	3	-		-	-	50	50
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week) / During Semester										
1	AP-AIML601	Activity Points	-	-		52#	-	-		-	-	-	-
Course Description			Teaching scheme (Holistic and Multidisciplinary Education-HME) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme					
								Presentation			Report		Term Work
								AC			AC		
1	HME –AIMLPS601	Professional Skills V (Machine Learning Tools & Technologies)	-	-	2	2	1	15			10		25
2	HME –IP601	Industry Practise-IV(Employability Skills) Application Architect(Database for Modern Application)	-	-	2	2	1	15			10		25
3	HME -RBL601	Research Based Learning (Minor-Project)	-	-	2	2	1	15			10		25
		Total	-	-	6	6	3	Total marks (HME)					75
		Total	14	-	10	24	22	Grand Total marks:					775

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

PROFESSIONAL ELECTIVE I	
Course Code	Course name
PEC-AIML6011	AI in Digital Signal and Image Processing
PEC-AIML6012	High Performance Computing in AI
PEC-AIML6013	AI in Cloud Computing
PEC-AIML6014	Big data analytics using ML
PEC-AIML6015	ML with AR VR

List of Courses- Open Electives (Interdisciplinary Offerings)

SEM-VI Emerging Technologies		
OPEN ELECTIVE I		
To be conducted by dept. for other dept. students (e.g., Not for COMP/IT background students if completed as a core or PE course)		
Sr.No	Course Code- OEC601X (Dept. Name)	Course name
1	COMP	Basics of Social Network Analysis (SNA)
2	IT	Basics of Robotic Process Automation (RPA)
3	EXTC	Fundamentals of Communication Engineering
4	E&CS	Introduction to Eco-design of Sustainable Electronic Products
5	CIVIL	Fundamentals of Development Engineering
6	MECH	Introduction to Industry 4.0
7	AIDS	Introduction to Artificial Intelligence and Data Science
8	IOT	Introduction to IoT Applications
9	AIML	Introduction to Blockchain
10	CS&E	Basics of Cyber Security and Laws
11	MME	Introduction to Robotics
12	EH&S	English for Competitive Exams



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/Industry Practices/Industry Certification: 1 credit =2 hrs e) Holistic Development - Activity Based Learning/Project Based Learning/Research Based Learning: 1 credit=2 hrs
3. Professional Skills & Industry Practice activity will run in the form of integrated theory and practical course & syllabus is linked with level 6 of NSQF.
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-VII/B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education - (CBCGS-HME 2023)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)

Course Description			Teaching Scheme (Program Specific)					Examination scheme						
Sr. No.	Course Code	Course Title	Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation						
			Hours Per Week				Credits	40/20 IA		60/30 ESE)	Practical/Oral (25/75) PR/OR	Term Work (25/50) TW	Total	
			Theory	Tutorial	Practical	Contact Hours		ISE	IE					
1	PCC- AIML701	Natural Language Processing	3	-	2	5	4	20	20	60	25	25	150	
2	PCC- AIML702	Deep Learning	3	-	2	5	4	20	20	60	25	25	150	
3	PEC- AIML701X	Professional Elective-II	3	-	2@	5	4	20	20	60	25	25	150	
4	PEC- AIML702X	Professional Elective-III	3	-	-	3	3	20	20	60	25	25	150	
5	OEC-701X	Open Elective-II	3	-	-	3	3	20	20	60	-	25	125	
6	PROJ- AIML701	Project-I	-	-	4	4	2	-		-	25	25	50	
		Total	15	-	10	25	20	Total marks					775	
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week) / During Semester											
1	AP-AIML701	Activity Points	-	-	-	48#	-	-	-	-	--	-	-	
Course Description			Teaching scheme (Holistic Student Development - HSD) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme						
								Presentation AC		Report AC		Term Work		
1	HME-AIMLIC701	Industry Certification I	-	-	4	4	2	25		25		50		
		Total	-	-	4	4	2			Total marks		50		
		Total	15	-	14	29	22	Grand Total marks:					825	

PROFESSIONAL ELECTIVE II			PROFESSIONAL ELECTIVE III		
Course Code	Course name	Sectors	Course Code	Course name	Sectors
PEC-AIML7011	AI&ML in Healthcare	Healthcare	PEC-AIML7021	Soft Computing and Computer Vision in Medical Diagnosis	Healthcare
PEC-AIML7012	AI&ML in Agritech	Agritech	PEC-AIML7022	Prediction Analysis & IoT in Agro	Agritech
PEC-AIML7013	Information Security	Security	PEC-AIML7023	AI in BlockChain	Security
PEC-AIML7014	Game Programming	Gaming	PEC-AIML7024	3D Graphics and Animation	Gaming
PEC-AIML7015	Human Machine Interaction	Societal Benefits	PEC-AIML7025	Social Media Analytics	Societal Benefits

List of Courses- Open Electives (Multidisciplinary Offerings)

Tracks	OE-II(Sem VII)
Sectors Specific Courses	1. Product Design and development 2. Alternative Fuels 3. Food Safety and Management 4. Design Thinking
Research Based Courses	1. Research Methodology 2. Innovation & Entrepreneurship development and management 3. Intellectual Property Rights-Laws and Practice 4. Contemporary Technology Development (Industry Case Study Based)
Management Courses	1. Business Intelligence 2. Supply Chain Management 3. Digital Marketing and E commerce 4. Industrial Safety and Management
Sustainable Development Courses	1. Renewable Energy Technologies 2. Sustainable Agriculture 3. Fundamentals of Disaster Management 4. Waste Management and Energy Recovery
Foreign Languages	1. German Language 1 2. French Language 1 3. Japanese Language 1



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/Industry Practices/Industry Certification: 1 credit =2 hrs
3. During Academic conduct, practical load shall be conducted in batches.
4. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

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.

AICTE 100 Activity Points:

10. # 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 Student Development (CBCGS- HME 2023)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)- Category-1

Course Description			Teaching Scheme (Program Specific)					Examination Scheme					
Sr. No.	Course Code	Course Title	Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation					
			Hours Per Week				Credits	40/20		60/30	Practical/Oral (25/50)	Term Work (25/100)	Total
			Theory	Tutorial	Practical	Contact Hours		IA					
								ISE	IE	(ESE)	PR/OR	TW	
1	PCC- AIML801	Cognitive Computing	3	-	-	3	3	20	20	60	-	25	125
2	PCC- AIML802	Reinforcement Learning	3	-	-	3	3	20	20	60	-	25	125
3	PEC- AIML801X	Professional Elective-IV	3	-	@2	5	4	20	20	60	25	25	150
4	OEC-801X	Open Elective-III	3	-	-	3	3	20	20	60	-	-	100
6	PROJ- AIML801	Project-II	-	-	12	12	6	-		-	50	50	100
		Total	12	-	14	26	19	-		-	Total marks		600
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week) / During Semester										
1	AP-AIML801	Activity Points	-	-	-	52#	-	-		-	--	-	-
Course Description			Teaching scheme (Holistic Student Development - HSD) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme					
								Presentation		Report		Term	
								AC		AC		Work	
1	HME-AIMLIC801	Industry Certification II	-	-	4	4	2	25		25		50	
		Total	-	-	4	4	2			Total marks		50	
		Total	12	-	18	30	21			Grand Total marks:		650	



B.Tech. Semester-VIII/B.Tech. Artificial Intelligence and Machine Learning
Choice Based Credit Grading Scheme with Holistic Student Development (CBCGS- HME 2023)
TCET Autonomy Scheme (w.e.f. A.Y. 2023-24)-Category-2 (Full sem Internship)

Course Description			Teaching Scheme (Program Specific)					Examination Scheme					
Sr. No.	Course Code	Course Title	Modes of Teaching / Learning / Weightage					Modes of Continuous Assessment / Evaluation					
			Hours Per Week				Credits	40/20		60/30	Practical/Oral (25/50)	Term Work (25/100)	Total
			Theory	Tutorial	Practical	Contact Hours		IA					
								ISE	IE				
1	*PEC- AIML801X	Professional Elective-IV	3	-	@2	5	4	20	20	60	25	25	150
2	*OEC-801X	Open Elective-III	3	-	-	3	3	20	20	60	-	-	100
		Total	6	-	2	8	7	-		-	Total marks		250
Course Description			Contact Hrs. during Semester Break/ End of Semester(Between 21 st and 25 th Week)										
1	SI-AIML801	Industry oriented professional Internship	-	-	-	480	12	-		-	-	350	350
Course Description			Contact Hrs. during Week End / Semester Break/ End of Semester (Between 21 st and 25 th Week) / During Semester										
1	AP-AIML801	Activity Points	-	-	-	52#	-	-		-	--	-	-
Course Description			Teaching scheme (Holistic Student Development - HSD) (Conducted in the beginning of Semester during first 3 Weeks)					Assessment/Evaluation Scheme					
								Presentation		Report		Term Work	
								AC		AC			
1	HME-AIMLIC801	Industry Linked Certification	-	-	4	4	2	25		25		50	
		Total	-	-	4	4	2			Total marks		50	
		Total	15	-	6	12	21			Grand Total marks:		650	

PROFESSIONAL ELECTIVE IV		
Course Code	Course name	Sector
PEC-AIML8011	Intelligent Embedded System	Healthcare
PEC-AIML8012	Intelligent Robots and Drone Technology	Agritech
PEC-AIML8013	Bioinformatics	Security
PEC-AIML8014	Game Engine and Architecture	Gaming
PEC-AIML8015	Generative AI	Societal Benefit

List of Courses- Open Electives (Multidisciplinary Offerings)

Tracks	OE-III(Sem VIII)	
Sectors Specific Courses	1.	Engineering Optimization
	2.	Biofuels
	3.	Hi. Tech Horticulture
	4.	Game Design
Research Based Courses	1.	Research & Publication Ethics
	2.	Business development
	3.	Patent Drafting
	4.	Sustainable research practice
Management Courses	1.	Project Management
	2.	Human Resource Management
	3.	Knowledge Management
	4.	Pollution and its Management
Sustainable Development Courses	1.	Green Technology
	2.	Climate change and Sustainability
	3.	Smart Cities
	4.	Sanitation and Water Management
Foreign Languages	1.	German Language 2
	2.	French Language 2
	3.	Japanese Language 2



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 Theory/Tutorial: 1 credit=1 hr b) Practical: 1 credit =2 hrs c) Experiential Learning/Internship: 1 credit= 40 hrs
d) Professional skills/Industry Practices/Industry Certification: 1 credit =2 hrs
3. During Academic conduct, practical load shall be conducted in batches.
4. @-Professional Elective Courses Lab will be conducted in the form of Capstone Project

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 Examination) shall also be conducted under IA. ESE shall be conducted for 60 marks with duration of 2 hours. Three In-Semester Examinations (ISE) will be conducted during each semester. Average of Three exam will be considered and passing is mandatory in ISE 3.
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. There will be two categories for students in semester VIII:

Category-1 Students doing major projects through regular curriculum (06 Credits).

Category 2 Students doing full Semester Industry Internship (06 Credits).

Industry Internship evaluation should be done twice in the semester by the Internal Faculty and 1 quality paper publication can be done by students as outcome (marks of which can be included as part of term work)

*Category 2 courses to be completed online mode or allied courses from MOOCs

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