

## LIST OF MINORS

<b>1.</b>	<b>AEROSPACE ENGINEERING</b>	<b>MINOR</b>	Template No. <b>AE-5</b>
		<b>Title</b>	<b>AEROSPACE ENGINEERING</b>
		<b>C</b>	<b>Compulsory Course:</b>
		<b>O</b>	AE201A [05]
		<b>U</b>	
		<b>R</b>	<b>Any THREE from:</b>
		<b>S</b>	AE211A [11]
		<b>E</b>	AE321A [09]
		<b>S</b>	AE331A [09]
			AE650A [09] / AE753A [09] / AE341 [11]
			<b>32-36</b>

## LIST OF MINORS

<b>2.</b>	<b>BIOLOGICAL SCIENCES AND BIO-ENGINEERING</b>	<b>MINOR</b>		Template No. <b>BSBE-5</b>		
		<b>Title</b>	<b>TISSUE ENGINEERING</b>			
		<b>C O U R S E S</b>	BSE211A [09]			
			BSE411A [11]			
	BSE421A [11]					
	-					
		<b>31</b>				

**LIST OF MINORS**

<b>3.</b>	<b>CHEMICAL ENGINEERING</b>	<b>MINOR</b>		<b>Template No. CHE-5</b>	
		<b>Title</b>	<b>CHEMICAL ENGINEERING</b>		
		<b>C</b>	CHE251A [09]		
		<b>O</b>	CHE261A [09]		
		<b>U</b>	CHE313A [09]		
		<b>R</b>	CHE331A [09]		
<b>S</b>					
<b>E</b>	-				
<b>S</b>					
		<b>36</b>			

**LIST OF MINORS**

<b>4.</b>	<b>CHEMISTRY</b>	<b>MINOR</b>		Template No. <b>CHM-5</b>	
		<b>Title</b>	<b>PHYSICAL CHEMISTRY*</b>	<b>INORGANIC CHEMISTRY</b>	<b>ORGANIC CHEMISTRY</b>
			<b>Compulsory Courses:</b>	<b>Compulsory Courses:</b>	<b>Compulsory Courses:</b>
		<b>C</b>	CHM321A [09]	CHM345A [09]	CHM201A [09]**
			CHM322A [09]	CHM342A [09]	CHM202A [09]
		<b>O</b>	<b>Any TWO from:</b>	<b>Any TWO from:</b>	CHM303A [09]
					CHM402A [09]
		<b>U</b>	CHM621A [09]	CHM616A [09]	-
			CHM622A [09]	CHM631A [09]	
CHM626A [09]	CHM646A [09]				
CHM636A [09]	CHM647A [09]				
CHM637A [09]	CHM651A [09]				
CHM650A [09]	CHM654A [09]				
CHM664A [09]	CHM668A [09]				
CHM685A [09]	CHM691A [09]				
CHM689A [09]					
CHM695A [09]					
CHM696A [09]					
CHM699A [09]					
	<b>36</b>	<b>36</b>	<b>36</b>		
<b>REMARKS:</b>					
1) *CSO202A is a pre-requisite for Minor in Physical Chemistry					
2) **EXCEPTION: CHM201A to be done by Y13 and onward batches. Y11 and Y12 batch shall do CHM203A. Course title, content and credits are same. Just the course number has been changed.					

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<b>5.</b>	<b>CIVIL ENGINEERING</b>	<b>MINOR</b>		<b>Template No. CE-5</b>
		<b>Title</b>	<b>EARTH SCIENCES</b>	
		<b>C</b>	<b>CE322A [09]</b>	
		<b>O</b>	<b>CE422A [09]</b>	
		<b>U</b>	<b>CE642A [09]</b>	
<b>R</b>				
<b>S</b>	-			
<b>E</b>				
<b>S</b>				
			<b>27</b>	

**LIST OF MINORS**

6.	COMPUTER SCIENCE & ENGINEERING	MINOR			Template No. CSE-4	
		ALGORITHMS	COMPUTER SYSTEMS	THEORY OF COMPUTING	ARTIFICIAL INTELLIGENCE* <sup>1</sup>	MACHINE LEARNING & APPLICATIONS
		COMPULSORY COURSE(S):	COMPULSORY COURSE(S):	COMPULSORY COURSE(S):	COMPULSORY COURSE(S):	COMPULSORY COURSE(S):
		CS210A [12]	CS210A [12]	CS210A [12]	CS210A [12/ ESO207A [12]	CS210A [12/ ESO207A [12]
		CS345A [09]		CS340A [09]	CS365A [09]	CS771A [09]
		And, ONE from:	And, TWO from:	And, ONE from:	And, ONE from:	And, ONE from:
		CS645A [09]	CS220A [12]	CS640A [09]	CS671A [09]	CS365A [09]
		CS646A [09]	CS330A [12]	CS641A [09]	CS672A [09]	CS671A [09]
		CS647A [09]	CS315A [09]	CS642A [09]	CS674A [09]	CS676A [09]
		CS648A [09]	CS335A [12]	CS643A [09]	CS675A [09]	CS678A [09]
		CS663A [09]	CS422A [09]	CS644A [09]	CS676A [09]	CS685A [09]
		CS664A [09]	CS425A [09]	CS649A [09]	CS685A [09]	CS698I [09]
		CS719A [09]	CS433A [09]	CS680A [09]	CS686A [09]	CS698N [09]
		CS743A [09]	CS455A [09]	CS681A [09]	CS782A [09]	CS698S [09]
				CS687A [09]		CS772A [09]
				CS740A [09]		CS773A [09]
				CS741A [09]		CS774A [09]
				CS742A [09]		-
		<p><b>Remarks:</b></p> <p>1) For each Minor stream, the minimum total credit requirement is 30.</p> <p>2) In each minor stream any related course(s), even if not mentioned in the list of optional courses, may be taken as optional with the permission of the CSE DUGC.</p> <p>3) *1 = Only for students graduating till 2017.</p>				

**LIST OF MINORS**

<b>7.</b>	<b>ELECTRICAL ENGINEERING</b>	<b>MINOR</b>			<b>Template No.EE-4</b>		
		<b>Title</b>	<b>MICROELECTRONICS/ DIGITAL SYSTEMS</b>	<b>POWER</b>	<b>COMMUNICATIONS &amp; SIGNAL PROCESSING</b>	<b>CONTROLS</b>	<b>RF &amp; PHOTONICS</b>
		<b>C</b>	EE200A [11]	EE200A [11]	EE200A [11]	EE200A [11]	EE200A [11]
		<b>O</b>	EE210A [11]	EE330A [11]	EE320A [11]	EE250A [11]	EE340A [11]
		<b>U</b>	EE311A [09]/ EE370A [11]	EE360A [09]	EE321A [09]/ EE301A [09]	EE650A [09]	EE612A [09]/ EE642A [09]/ EE648A [09]
<b>R</b>							
<b>S</b>							
<b>E</b>							
<b>S</b>							
		<b>31/33</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	

**LIST OF MINORS**

<b>8.</b>	<b>HUMANITIES &amp; SOCIAL SCIENCES</b>	<b>MINOR</b>		Template No. <b>HSS-1</b>	
		Title	LINGUISTIC THEORY	ENGLISH LITERATURE	
		C O U R S E S			
				ONE course from following:	THREE course from following:
				ENG122A [11]	ENG123A [11]
				ENG124A [11]	ENG431A [09]
					ENG432A [09]
				and, TWO courses from following:	ENG433A [09]
				ENG408A [09]	ENG434A [09]
				ENG423A [09]	ENG435A [09]
				ENG443A [09]	ENG436A [09]
				ENG447A [09]	ENG437A [09]
				ENG448A [09]	ENG438A [09]
				ENG449A [09]	ENG439A [09]
				ENG452A [05] + ENG453A [05]	ENG440A [09]
	ENG784A [09]	ENG445A [09]			
	ENG754A [09]	ENG446A [09]			



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		ENG759A [09]	ENG456A [09]
			ENG457A [09]
			ENG458A [09]
			ENG460A [09]
			ENG719A [09]
			ENG742A [09]
			ENG743A [09]
			ENG750A [09]
		29 / 30	27 / 29
<p><b><u>Remarks:</u></b></p> <p>If a student has done a course in English other than those listed above and wishes to have a Minor in English (Linguistics or English Literature), he/she may request the DUGC, HSS, to approve of the same.</p>			

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<b>9.</b>	<b>INDUSTRIAL AND MANAGEMENT ENGINEERING</b>	<b>MINOR</b>		<b>Template No. IME-3</b>
		<b>Title</b>	<b>INDUSTRIAL AND MANAGEMENT ENGINEERING</b>	
		<b>C</b>	DE PG-1	
		<b>O</b>	DE PG-2	
		<b>U</b>	DE PG-3	
		<b>R</b>		
<b>S</b>	-			
<b>E</b>				
<b>S</b>				
	<b>27</b>			
<b>REMARKS:</b>				
1) DE PG may be from IME or MBA courses.				

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<b>10.</b>	<b>MATERIALS SCIENCE &amp; ENGINEERING</b>	<b>MINOR</b>		Template No. <b>MSE-5</b>	
		<b>Title</b>		<b>FUNCTIONAL MATERIALS</b>	
		<b>C O U R S E S</b>	<a href="#">Any THREE from:</a>		
			<b>MSE604A [09]</b>		
			<b>MSE624A [09]</b>		
			<b>MSE628A [09]</b>		
			<b>MSE631A [09]</b>		
			<b>MSE693A [09]</b>		
			<a href="#">27</a>		

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<b>11.</b>	<b>MATHEMATICS AND SCIENTIFIC COMPUTING</b>	<b>MINOR</b>		Template No. <b>BS-MTH-5</b>
		<b>Title</b>	<b>APPLIED MATHEMATICS</b>	
		<b>C</b>		
		<b>O</b>	<b>MTH308A [11]</b>	
		<b>U</b>	<b>MTH428A [11]</b>	
		<b>R</b>	<b>MTH426A [09]</b>	
		<b>S</b>	-	
<b>E</b>				
<b>S</b>				
		<b>31</b>		

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<b>12.</b>	<b>MECHANICAL ENGINEERING</b>	<b>MINOR</b>		<b>Template No. ME-5</b>	
		<b>Title</b>	<b>MANUFACTURING SCIENCES</b>	<b>COMPUTATIONAL TECHNIQUES IN MECHANICAL ENGINEERING</b>	
		<b>C O U R S E S</b>	<b>Any THREE from:</b>		<b>Any THREE from:</b>
			<b>ME661A [09]</b> (Prerequisite TA202A)	<b>ME623A [09]</b> (Prerequisite ESO202A, MSO203B)	
			<b>ME662A [09]</b> (Prerequisite TA202A)	<b>ME630A [09]</b> (Prerequisite ESO201A, ESO204A, MSO203B)	
			<b>ME663A [09]</b> (Prerequisite ESO202A, MSO203B)	<b>ME685A [09]</b> (Prerequisite – No backlog in core courses)	
			<b>ME664A [09]</b> (Prerequisite TA202A, ESO204A or Equivalent Heat Transfer Course)	<b>ME751A [09]</b> (Prerequisite TA101A)	
			<b>ME665A [09]</b> (Prerequisite TA202A)	<b>MEXXA [09]</b> (Nonlinear Finite Element Techniques in Solid Mechanics)	
			<b>ME774A [09]</b> (Prerequisite ESO202A, MSO203B)	<b>MEXXA [09]</b> (Atomistic Simulations in Engineering)	
			<b>ME751A [09]</b> (Prerequisite TA101A)	-	
<b>ME761A [09]</b> (Prerequisite TA202A)					
	<b>27</b>	<b>27</b>			

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<b>13.</b>	<b>PHYSICS</b>	<b>MINOR</b>		Template No. <b>BS-PHY-5</b>	
		<b>Title</b>	<b>STATISTICAL MECHANICS</b>	<b>QUANTUM MECHANICS</b>	
		<b>C</b>			
		<b>O</b>	<b>PSO201A [08]</b>	<b>PSO201A [08]</b>	
		<b>U</b>	<b>PHY210A [06]</b>	<b>PHY210A [06]</b>	
		<b>R</b>	<b>PHY226B [06]</b>	<b>PHY226B [06]</b>	
<b>S</b>	<b>PHY412A [11]</b>	<b>PHY431A [11]</b>			
<b>E</b>	<b>31</b>	<b>31</b>			
<b>S</b>					

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14.	COGNITIVE SCIENCE	<b>MINOR</b>		Template No. <b>CONG.-1</b>	
		Title		COGNITIVE SCIENCE	
		Compulsory courses:			
		C O U R S E S	CGS601A [09]		
			BSE656A [09]		
			and, TWO courses from following list:		
			CGS702A [09]		
			SE367A [09]		
			CS671A [09]		
			CS781A [09]		
			CS782A [09]		
			CS784A [09]		
			CS785A [09]		
			CS786A [09]		
			CS789A [09]		
ENG748A [09]					
ENG760A [09]					
PHI444A [09]					
PHI452A [09]					
PHI758A [09]					
PSY499A [09]					
PSY760A [09]					
PSY770A [09]					
PSY772A [09]					
PSY789A [09]					
PSY790A [09]					
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15.	NUCLEAR ENGINEERING TECHNOLOGY	<b>MINOR</b>		Template No. <b>BS-NET 2</b>	
		<b>Title</b>	<b>NUCLEAR ENGINEERING TECHNOLOGY</b>		
		C			
		O	NT602A [09]		
		U	NT611A [09]		
		R	NT614A [09]		
S					
E	-				
S					
		<b>27</b>			

**The End**