



# DELHI TECHNOLOGICAL UNIVERSITY

(Formerly Delhi College of Engineering)  
Shahbad Daultapur, Main Bawana Road, Delhi-42

## Scheme for Part Time M.Tech. as per NEP-2020

### MULTIDISCIPLINARY CENTRE FOR GEOINFORMATICS

### **M.TECH. GEOINFORMATICS (GEO)**

SEMESTER I					
Code	Type	Cr	L-T-P	Total Credits	Level
GEO505	Departmental Core-1: Remote Sensing, Photogrammetry and Satellite Image Processing	4	3-0-2	12	500-599*
GEO507	Departmental Core-2: Introduction to Geographic Information System and Web GIS	4	3-0-2		
GEO509	Departmental Core-3: Advanced Surveying, Cartography, Geodesy, and GNSS	4	3-0-2		
SEMESTER II					
	Type	Cr	L-T-P	Total Credits	Level
GEO502	Departmental Core-4: Principles of Optical, Thermal and Hyperspectral Remote Sensing	4	3-0-2	12	500-599*
GEO504	Departmental Core-5: Microwave and Lidar Remote Sensing	4	3-0-2		
GEO520 (or) GEO522 (or) GEO524	Departmental Elective-1: Geointelligence – Terrain visualization, Trafficability and Target Detection (or) RS and GIS in Cryosphere and Water Hydrology Applications (or) Smart City, Sustainability and Urban Remote Sensing	4	3-1-0 3-1-0 3-1-0		
<b>NHEQF Level</b>					<b>6.5</b>
SEMESTER III					
	Type	Cr	L-T-P	Total Credits	Level
GEO601	Departmental Core-6: Advanced Image Processing in Geoinformatics	4	3-0-2	12	500-599*
GEO511/ (or) GEO513/ (or) GEO515	Departmental Elective-2: Introduction to Earth Sciences (or) Disaster Assessment and Management (or) Fundamentals of BIM, GeoBIM and Digital Twins	4	3-1-0 3-1-0 3-1-0		
<b>Self-Study Course</b>					
GEO551	Seminar	2	-		

GEO553	MOOC: Remote Sensing Principles and Applications (or) Image Processing using Python				
<b>Skill Enhancement Course 1**</b>					
GEO541	Skill Enhancement Course 1: Python, Matlab, GEE	2	0-0-4		
<b>Audit Course**</b>					
UEC501	English for Research Paper Writing	0	2-0-0		
UEC503	Disaster Management		2-0-0		
UEC505	Sanskrit for Technical Knowledge		2-0-0		
UEC507	Value Education		2-0-0		
UEC509	Constitution of India		2-0-0		
UEC511	Pedagogy Studies		2-0-0		
UEC513	Stress Management by Yoga		1-0-2		
UEC515	Personality Development through Life Enlightenment Skills			2-0-0	

### SEMESTER IV

Code	Type	Cr	L-T-P	Total Credits	Level
GEO530 (or) GEO532 (or) GEO534	Departmental Elective-3: Planetary and Space Sciences – Earth and Beyond (or) Advanced Geodesy and GNSS (or) Geosciences	4	3-1-0 3-1-0 3-1-0	12	500-599*
UCC502	Research Methodology and IPR	4	3-1-0		
<b>Skill Enhancement Course 2/Industrial Training</b>					
GEO540	Skill Enhancement Course-2: AI, ML and, GeoAI in Geoinformatics		0-0-4		
<b>NHEQF Level</b>					<b>6.5</b>

### SEMESTER V

Type	Cr	L-T-P	Total Credits	Level	
GEO601	Department Core-7: Advanced Image Processing in Geoinformatics	4	3-0-2	16	-
OMG601	(Open Elective) Geoinformatics and GNSS for Multidisciplinary Engineering solutions	4	3-1-0		
GEO603	Minor Project/ Research Thesis/ Patent	8	-		

### SEMESTER VI

Type	Cr	L-T-P	Total Credits	Level	
GEO604	Major Project/R Research Thesis/Patent	16	-	16	-
<b>NHEQF Level</b>				<b>7.0</b>	

**\*Level:** Refer to the draft UGC Curriculum and credit framework for the PG Programme.

**Note:** The list of self-study courses (SSC) subjects shall be available with the PG Section, and credits not to exceed 16 in the program. The open elective course (OEC) will be chosen from other departments' OECs.

**DELHI TECHNOLOGICAL UNIVERSITY  
SCHEME OF TEACHING AND EVALUATION**

**Scheme for Part Time M. Tech. as per NEP-2020  
DEPARTMENT OF CIVIL ENGINEERING  
M.TECH. GEOTECHNICAL ENGINEERING (GTE)**

Teaching Scheme					Contact Hours/ Week			Relative Weightage (%)				
S. No.	Subject Code	Course Title	Subject Area	Credit	L	T	P	CWS	PRS STS CMS	MTE	ETE	PRE
<b>SEMESTER I</b>												
1	GEO505	Remote Sensing, Photogrammetry and Satellite Image Processing	DCC-1	4	3	0	2	15	25	20	40	-
2	GEO507	Introduction to Geographic Information System and Web GIS	DCC-2	4	3	0	2	15	25	20	40	-
3	GEO509	Advanced Surveying, Cartography, Geodesy, and GNSS	DCC-3	4	3	0	2	15	25	20	40	-
<b>Total Credits</b>				<b>12</b>								
<b>SEMESTER II</b>												
1	GEO502	Principles of Optical, Thermal and Hyperspectral Remote Sensing	DCC-5	4	3	0	2	15	25	20	40	-
2	GEO504	Microwave and Lidar Remote Sensing	DCC-6	4	3	0	2	15	25	20	40	-
3	GEO520	Geointelligence – Terrain visualization, Trafficability and Target Detection	DEC-2	4	3	1	0	25	-	25	50	-
	GEO522	RS and GIS in Cryosphere and Water Hydrology Applications			3	1	0	25	-	25	50	-
	GEO524	Smart City, Sustainability and Urban Remote Sensing			3	1	0	25	-	25	50	-
<b>Total Credits</b>				<b>12</b>								
<b>SEMESTER III</b>												
1	GEO601	Advanced Image Processing in Geoinformatics	DCC-4	4	3	0	2	15	25	20	40	-
2	GEO511 /	Introduction to Earth Sciences	DEC-1	4	3	1	0	25	-	25	50	-
	GEO513/	Disaster Assessment and Management			3	1	0	25	-	25	50	-
	GEO515	Fundamentals of BIM, GeoBIM and Digital Twins			3	1	0	25	-	25	50	-
<b>Self-Study Course*</b>												
3	GEO553 One of two options	MOOC/ SWAYAM (Remote Sensing Principles and Applications)	SEC-1	2	-	-	-	-	-	-	-	-
		MOOC/ SWAYAM (Image Processing using Python)			-	-	-	-	-	-	-	
<b>Skill Enhancement Course</b>												

4	GEO541	Python, Matlab, GEE	SEC-1	2	0	0	4	-	50	-	-	50
<b>Audit Course (Non-Credit)</b>												
5	UEC501	English for Research Paper Writing	AC-1	0	2	0	2	25	-	25	50	-
	UEC503	Disaster Management			2	0	2	25	-	25	50	-
	UEC505	Sanskrit for Technical Knowledge			2	0	2	25	-	25	50	-
	UEC507	Value Education			2	0	2	25	-	25	50	-
	UEC509	Constitution of India			2	0	2	25	-	25	50	-
	UEC511	Pedagogy Studies			2	0	2	25	-	25	50	-
	UEC513	Stress Management by Yoga			1	0	2	15	25	20	40	-
	UEC515	Personality Development through Life Enlightenment Skills			2	0	2	25	-	25	50	-
<b>Total Credits</b>				<b>12</b>								
<b>SEMESTER IV</b>												
1	GEO530	Planetary and Space Sciences – Earth and Beyond	DEC-3	4	3	1	0	25	-	25	50	-
	GEO532	Advanced Geodesy and GNSS			3	1	0	25	-	25	50	-
	GEO534	Geosciences			3	1	0	25	-	25	50	-
2	UCC502	Research Methodology and IPR	UCC-1	4	3	1	0	25	-	25	50	-
3	GEO540	AI, ML and, GeoAI in Geoinformatics	SEC-2	4	0	0	4	--	50	--	--	50
<b>Total Credits</b>				<b>12</b>								
<b>SEMESTER V</b>												
1	GEO601	Advanced Image Processing in Geoinformatics	DCC-7	4	3	0	2	15	25	20	40	-
2	OMG601	Open Elective- Geoinformatics and GNSS for Multidisciplinary Engineering solutions	OEC-1	4	3	1	0	25	-	25	50	-
3	GEO603	Minor Project/ Research Thesis/Patent	DCC-8	8	0	0	0	-	40	-	-	60
<b>Total Credits</b>				<b>16</b>								
<b>SEMESTER VI</b>												
1	GEO604	Major Project/ Research Thesis/Patent	DCC-9	16	0	0	0	-	40	-	-	60
<b>Total Credits</b>				<b>16</b>								

### CREDITS IN FOUR SEMESTERS

Total	Course Type	Core: DCC	Generic Electives (GEC): University/ Open Electives	Department Electives (DEC)	Self-Study	Skill Enhancement Courses (SEC)
80	Credits	52	8	12	2	6