ORDINANCE

FOR

Diploma in Civil Technology

(THIS ORDINANCE HAS BEEN APPROVED IN THE MEETING OF BOARD OF MANAGEMENT HELD ON DATED ……)

APPLICABLE W.E.F. ACADEMIC SESSION 2023-24

SRI HARGOBINDGARH, PHAGWARA – HOSHIARPUR ROAD, PHAGWARA 144401 PUNJAB

ORDINANCE FOR

Diploma in Civil Technology

SHORT TITLE AND COMMENCEMENT

I. This Ordinance shall be called the Ordinance for the Diploma in Civil Technology of GNA University, Phagwara.

II. This Ordinance shall come into force with effect from academic session 2023-24.

1. **Name of Program:** Diploma in Civil Technology
2. **Name of Faculty:** Faculty of Engineering, Design and Automation (FEDA)

3. **Program Outcomes:**

I) **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and engineering, specialization to the solution of complex engineering problems.

II) **Problem analysis**: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.

III) **Design/development of solutions:** Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.

IV) **Conduct investigations of complex problems:** Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

V) **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

VI) **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

VII) **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

VIII) **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

IX) **Individual and team work**: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.

X) **Communication:** Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.

XI) **Project management and finance**: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.

XII) **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

4. Program Specific Outcomes:

After the completion of Diploma in Civil Technology the student will be able to

I. acquire comprehensive understanding of concepts, operation and performance of all major aspects of civil engineering such as structural, building construction, surveying, BIM, piping design, transportation, etc.
II. apply their knowledge of construction management and accounts to prepare cost estimates and execute construction works.
III. apply their knowledge of analytical tools for developing modelling and simulation of given problems.
IV. The student will have rigorous training on experimental/field work.

5. Program Duration: Total duration of the Program shall be of 3 years and each year will comprise of two semesters. In addition, each semester shall normally have 90 working days. If the student is unable to complete its program in prescribed period then he/she will be given 2 more years to complete the program by paying the tuition fees for each semester.

6. Eligibility for Admission: 10^{th} standard with 50% marks in aggregate (45 % for SC/ST/OBC). The students who passed two years ITI or 10+2 with vocational/science subjects will be admitted through lateral entry in the third semester of the program.

7. Admission Process: The centralized admission cell shall make selection for admission to the program. The selection of the candidate shall be strictly on merit basis, subject to fulfillment of eligibility criteria. Candidates are required to fill the prescribed application form and submit the same to the admission cell. The admission cell after verifying the eligibility will forward the form to the Office of Registrar for further processing. If the candidate is selected, he/she is required to deposit the prescribed fee along with the application form and the required documents to the Office of Registrar.

8. Curriculum: The 3 years curriculum has been divided into six semesters and shall include lectures/ tutorials/ laboratory work/ field work/ outreach activity/ project work/ viva/ seminars/ presentations/ term papers/assignments etc. or a combination of some of these. The curriculum will also include other curricular, co-curricular and extra-curricular activities as may be prescribed by the university from time to time.

9. Choice Based Credit System:

The University has adopted Choice Based Credit System (CBCS), which provides an opportunity to the students to choose courses from the offered courses comprising of Core, Elective, Ability Enhancement and Audit Courses. The choice based credit system provides a "flexible" approach in which the students

can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning. Following are the types of courses and structure for the program:

Course Categories:

I.	BSC:	Basic Science Courses
II.	ESC:	Engineering Science Courses
III.	HSMC:	Humanities and Social Sciences including Management courses
IV.	PCC:	Professional core courses
V.	PEC:	Professional Elective courses
VI.	OEC:	Open Elective courses
VII.	LC:	Laboratory course
VIII.	MC:	Mandatory courses (Audit Course)
IX.	PROJ:	Project work/Dissertation

Audit Course:

The introduction of two Audit courses covering subjects of developing desired attitude among the learners is on the line of initiatives such as Unnat Bharat Abhiyan, Yoga, Value education, Disaster management, Sanskrit, Pedagogy, Constitution of India, Personality development through Indian culture etc.

Introducing Research Component:

Project work/Dissertation is considered as a special course involving application of knowledge in solving / analysing /exploring a real life situation / difficult problem. A Project/Dissertation work may be given in lieu of a discipline specific elective paper.

10. Medium of Instructions:

10.1 The medium of instructions and examination will be English.

10.2 Practical work/Project Work / Project Report / Dissertation / Field Work Report / Training Report etc., if any, should be presented in English.

11. Mode: The program is offered in 'Full Time' mode of study only.

12. Attendance Requirement to be Eligible to Appear in End Semester Examination:

12.1 Every student is required to attend at least 75% of the lectures delivered squaring tutorials, practical and other prescribed curricular and co-curricular activities.

12.2 Dean of Faculty may give a further relaxation of attendance up to 5% to a student provided that he/she has been absent with prior permission of the Dean of the Faculty for the reasons acceptable to him/her.

12.3 Further, relaxation up to 10% may be given by The Vice Chancellor to make a student eligible under special circumstances only.

12.4 No student will be allowed to appear in the end semester examination if he/she does not satisfy the attendance requirements. Further, the attendance shall be counted from the date of admission in the University or commencement of academic session whichever is later.

13. Credit: A unit by which the course is measured. It determines the number of hours of instruction required per week.

Definition of Credit	
1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
2 Hours Practical (Lab) per week	1 credit

14. Program Structure:

SEMESTER I										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	N.A	DPC101	Chemistry for Engineering	3	0	0	40	60	100	3
2	N.A	DPM101	Mathematics for Engineering-I	3	0	0	40	60	100	3
3	N.A	DIP101	Drawing for Engineering	1	0	6	40	60	100	4
4	N.A	DIP102	Engineering for Fun	0	0	4	60	40	100	2
5	N.A	COM101	Functional English	0	0	2	20	30	50	2
6	N.A	DPC121	Chemistry for Engineering Laboratory	0	0	2	30	20	50	1
Total							**230**	**270**	**500**	**15**

SEMESTER II										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	N.A	DPP101	Physics for Engineering	3	0	0	40	60	100	3
2	DPM101	DPM201	Mathematics for Engineering-II	3	0	0	40	60	100	3
3	N.A	DIP103	Computing for Engineers	3	0	0	40	60	100	3
4	N.A	DIP104	Basic Workshop Practices	0	0	6	60	40	100	3
5	N.A	DIP105	Fundamentals of Electronics and Electrical Engineering	3	0	0	40	60	100	3
6	N.A	DPP121	Physics for Engineering Laboratory	0	0	2	30	20	50	1
7	N.A	DIP123	Computing for Engineers Laboratory	0	0	2	30	20	50	1
Total							**280**	**320**	**600**	**17**

SEMESTER III										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	NA	DCT301	Building Construction	3	1	0	40	60	100	4
2	NA	DCT302	Building Drawing	0	0	6	40	60	100	3
3	NA	DCT303	Surveying	3	0	0	40	60	100	3
4	NA	DCT304	Construction Materials	3	1	0	40	60	100	4
5	NA	DME305	Applied Mechanics	3	0	0	40	60	100	3
6	NA	DCT321	Building Construction Laboratory	0	0	2	30	20	50	1
7	NA	DCT323	Surveying Laboratory	0	0	6	30	20	50	3
8	NA	DCT324	Construction Materials Laboratory	0	0	2	30	20	50	1
Total							**290**	**350**	**650**	**22**

SEMESTER IV										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	NA	DCT401	Construction Management and Accounts	3	0	0	40	60	100	3
2	NA	DCT402	Structural Mechanics	3	1	0	40	60	100	4
3	NA	DCT403	Fundamentals of piping	3	0	0	40	60	100	3
4	NA	DME401	Fluid Mechanics	3	1	0	40	60	100	4
5	NA	ENS101	Environmental Studies	2	0	0	20	30	50	2
6	NA	DCT422	Structural Mechanics Laboratory	0	0	4	30	20	50	2
7	NA	DME421	Fluid Mechanics Laboratory	0	0	2	30	20	50	1
Total							**240**	**310**	**550**	**19**

SEMESTER V										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	NA	DCT501	Reinforced Concrete Design	3	0	0	40	60	100	3
2	NA	DCT502	Building Information Modelling (BIM)	3	0	0	40	60	100	3
3	NA	DCT503	Soil and Foundation Engineering	4	0	0	40	60	100	4
4	NA	DCT504	Pipe Drafting and Design	1	0	0	40	60	100	1
5	NA	DCT500	Survey Camp	0	0	0	60	40	100	2
6	NA	DCT522	Building Information Modelling (BIM) Laboratory	0	0	4	30	20	50	2
7	NA	DCT523	Soil and Foundation Engineering Laboratory	0	0	2	30	20	50	1
8	NA	DCT524	Pipe Drafting and Design Laboratory	0	0	4	30	20	50	2
9	NA		Elective-1	3	0	0	40	60	100	3
Total							**350**	**400**	**750**	**21**

SEMESTER VI										
S. No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Marks Distribution**			**Credit**
							Internal	**External**	**Total**	
1	NA	DCT601	Steel Structure Design	3	1	0	40	60	100	4
2	NA	DCT602	Highway Engineering	3	0	0	40	60	100	3
3	NA	DCT603	Pipe Stress Analysis	2	1	0	40	60	100	3
4	NA	DIP600	Major Project	0	0	4	60	40	100	2
5	NA	DCT621	Steel Structure Design Laboratory	0	0	2	30	20	50	1
6	NA	DCT622	Pipe Stress Analysis Laboratory	0	0	4	30	20	50	2
7	NA	DCC623	Advanced Computer Aided Drafting	0	0	4	60	40	100	2
8	NA		Elective-2	3	0	0	40	60	100	3
Total							**340**	**360**	**700**	**20**

List of Electives

Electives -1							
S.No.	**Pre-Requisites**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Credit**
1	NA	DCT541	Disaster Management	3	0	0	3
2	NA	DCT542	Waste Water Engineering	3	0	0	3
3	NA	DCT543	House Drainage of Building	3	0	0	3
4	NA	DCT544	Water Supply	3	0	0	3
Electives -2							
1	NA	DCT641	Irrigation Engineering	3	0	0	3
2	NA	DCT642	Repair and Maintenance of Buildings	3	0	0	3
3	NA	DCT643	Estimating and costing	3	0	0	3
4	NA	DCT644	Earth Quake Resisting Buildings	3	0	0	3

15. Examination/Continuous Assessment System (CAS):

For CAS two assessment components are adopted to evaluate student's performance.

15.1 Internal Assessment, which includes attendance, mid semester examination and other components (Assignment, Snap Test, Project, Research Based Assignments, Practical Lab Continuous Assessment, Quiz, Multiple Choice Questions, Case Study, Field Survey/Field Report etc.) carrying a weightage of 40%.

15.2 External Assessment i.e. End Semester Examination, carrying a weightage of 60%.

15.3 Internal assessment of practicals i.e. Practical Lab Continuous Assessment carrying a weightage of 60%.

15.4 External assessment of practicals i.e. Practical Lab External, carrying a weightage of 40%.

15.5 Every student has to score at least 25% marks each in Continuous Assessment and End Semester examination. The minimum pass percentage is 40% in aggregate. In case a student scores more than 25% each in Continuous Assessment and End Semester examination, but overall percentage in the concerned subject remains less than 40% , then student has to repeat End Semester Examination in that subject.

15.6 Internal Assessment of practicals i.e., Practical Lab Continuous Assessment, carrying a weightage of 60%

15.7 External Assessment of practicals i.e., Practical Lab External, carrying a weightage of 40%

16. Grading System: University follows eight letter grading system (A+, A, B+, B, C+, C, D, and F) that have grade points with values distributed on a 10 point scale for evaluating the performance of student. The letter grades and the corresponding grade points on the 10-point scale are as given in the table below. If number of passing students in any subject is less than or equal to 30 then Absolute Grading System will be followed otherwise Relative Grading System will be followed for evaluation.

NB: The CGPA can be converted to percentage by using the given formula:

CGPA x 10 = %

e.g. 7.8 x 10 = 78%

Note: Cumulative Grade Point Average (CGPA), it is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

Academic Performance	Range of Marks	Grades	Grade Points	Remarks
Outstanding	≥90	A+	10	
Excellent	≥80 &< 90	A	9	
Very Good	≥70 &< 80	B+	8	
Good	≥60 &< 70	B	7	
Fair	≥50 &< 60	C+	6	
Average	>40 &< 50	C	5	
Minimally Acceptable	40	D	4	
Fail	< 40	F	0	
Incomplete		I	-	
Withdrawal		W	-	
Grade Awaited		GA	-	
Minor Project		S/US	-	S-Satisfactory, US-Unsatisfactory

16.1 Acceptance of MOOC courses

Faculty of Faculty of Engineering, Design and Automation accepts the MOOC course available on SWAYAM platform for credit transfer. 40% of the courses can be taken from the available list of MOOCs on SWAYAM.

Instructions for MOOC courses

a) MOOC courses taken for credit transfer must be approved and recommended by Dean Academics and Dean of the Faculty before the start of the semester.

b) The copy of the list of courses taken by the students for any course has to be submitted to the Controller of the Examination.

c) MOOC course should be done from SWAYAM platform as per the guidelines of UGC.

d) To obtain the credit the student needs to complete the assessment of the course and provide the certificate of the course issued by the SWAYAM/NPTEL. After completing the certificate, the student must submit the certificate within a week to the department.

e) The fees (if any) for the registration and / or assessment of the MOOC course must be borne by the student only.

f) The student can opt for a particular online MOOC course if and only if the credit of that course is equivalently mapped with the program structure.

g) If the student obtains the same course credit which mapped with the course, then credit shall be considered for this course and the grade/marks provided by the accessing authority shall be transfer to the student. The result of the MOOC shall be taken on record by the university examination cell and a result declared for these papers.

h) For any particular semester, all results for the MOOC course must be submitted along with the marks of other papers of the same semester by the course coordinator.

i) MOOC course coordinators shall be appointed for each of the course taken by the student.

Definition of Credit

1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
2 Hours Practical (Lab) per week	1 credit

17. Based on the grades earned, a grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (Course title, number of credits, grade secured) along with SGPA of that semester and CGPA earned till that semester.

18. Re-appear: Student with backlog of one semester will be carried forward to next semester. Re-appear examinations will be conducted twice in a year after ESE of every semester.

19. Improvement of overall Score: A candidate having CGPA < 5.5 and wishes to improve his/her overall score may do so within two academic years immediately after passing the degree program by reappearing into maximum four course(s)/subject(s). The improvement would be considered if and only if the CGPA becomes > 5.5.

20. Program qualifying criteria: For qualifying the Program every student is required to earn prescribed credits (114). If any student fails to earn prescribed credits (114) for the program then he/she will get a chance to complete his/her Program in two more years than the actual duration of degree.

21. Revision of Regulations, Curriculum and Syllabi: The University may revise, amend, change or update the Regulations, Curriculum, Syllabus and Scheme of examinations through the Board of Studies and the Academic Council as and when required.