



**Student Handbook
ACADEMIC REQUIREMENTS AND
REGULATIONS
FOR B.SC. DEGREE
IN
Infrastructure and Environmental
Engineering (IEE)
Credit Hours Program**

2021/2020

1. Program definition

The Infrastructure and Environmental Engineering Program (IEE) follows a unique approach between the traditional civil engineering disciplines and various other disciplines, as this program is concerned with the application of engineering systems to environmental issues related to the design of infrastructure in urban areas through the identification of transport systems and construction of road networks, supply of potable water, Collection and treatment of industrial and wastewater, environmental protection from air pollution, water, soil, solid waste management (garbage) and disposal, treatment of civil and industrial environmental issues. This program has been developed to suit the labor market at the local and global level. Therefore, this program aims to prepare a graduate who is aware of the modern, environmentally friendly foundations that are required in all aspects of daily life, risk assessment, and studies of the reform process of existing traditional systems. The program also helps to develop students' ability to understand and respond to the challenges posed by development projects and environmental changes to mitigate severity Environmental problems and obtain a clean and environmentally friendly engineering product.

The Infrastructure and Environmental Engineering program qualifies for a new Bachelor's degree in engineering. It depends on the system of credit hours in the study. As the fields of engineering extend to many topics, a number of optional courses have been designed to cover all areas of engineering related to infrastructure projects such as surveying, roads, transportation, transportation systems, drinking water supply systems, environmental protection projects against wastewater pollution, solid waste, and so forth in urban settings. . The program offers a number of basic courses at the first three levels to provide students with the basics required to study engineering in the program. At the end of the third and fourth levels, a number of elective courses and basic design courses must be selected and chosen.

2. Basic Informations

2.1 Program Vision

Pioneering in the field of infrastructure and environmental engineering at the local and regional levels.

2.2 Program Mission

Preparing a distinguished graduate and researcher in the field of infrastructure engineering and the environment, able to compete in the local and regional labor market.

2.3 Program Objectives

1. Use the information and foundations for infrastructure engineering and the necessary environment, which is a mixture of basic sciences and various engineering and environmental studies, both in theory and in practice.
2. An understanding of the phenomena that make up the modern world around us, training in presentation skills and the use of computer applications.
3. The ability to design various infrastructure facilities for modern urban life, evaluate alternatives and choose the best alternative.
4. Working with the modern foundations for planning, designing and managing environmental systems and assessing the resulting environmental impact, as well as assessing risks.
5. Study the latest methods of environmental protection and analysis of urban engineering systems.
6. Studying costs in planning environmental and regional facilities, planning, designing and managing the highway and transport network and airports, designing, operating and treating different water stations and managing solid waste.
7. Setting specifications and tender documents, studying financial bids, evaluating infrastructure projects and protecting the built environment

2.4 Program Graduate Attribute:

The academic program for infrastructure and environmental engineering is keen to graduate distinguished and qualified engineers for the labor market. The program graduate will be able to:

1. Apply general and specialized knowledge and theories in the field of infrastructure engineering and the environment.
2. Conduct critical thinking to solve problems that can or cannot be expected in the context of infrastructure engineering and environment specialization taking into account all variables
3. Master an expanded set of specialized skills in the field of infrastructure engineering and the environment.
4. Apply critical evaluation of the results of the completed tasks and building technical expertise.
5. Apply cost-effectiveness measures.
6. Master the usual and unusual contexts in the field of infrastructure engineering.
7. Conduct digital and media tools to tackle professional and academic challenges in an innovative way.
7. Study and work independently under the general rules and regulations.
8. Make correct decisions in the context of infrastructure engineering and the environment.
9. Apply exploitation and development of workplace resources.
10. Apply business ethics.
11. Apply quality assurance standards in all procedures related to infrastructure and environmental engineering.

2.5 Graduate Competencies According to NARS 2018

A1: Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.

A2: Develop and conduct appropriate experimentation and/or simulation, analyze, and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.

A3: Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.

A4: Utilize contemporary technologies, codes of practice, and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.

A5: Practice research techniques and methods of investigation as an inherent part of learning.

A6: Plan, supervise, and monitor implementation of engineering projects, taking into consideration other trades requirements.

A7: Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.

A8: Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.

A9: Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.

A10: Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.

In addition to the Competencies for All Engineering Programs, the infrastructure and environmental engineering graduate and similar programs must be able to:

B1: Choose appropriate and sustainable technologies for infrastructure and environment projects.

B2: Apply optimal design for infrastructure projects such as transportation, traffic, roads, airports, stations and drinking water and sewage networks

B3: Plan and manage infrastructure projects and assess their environmental impacts.

B4: Deal with tenders, contracts and financial issues related to infrastructure and environmental projects.

3. The Ruls of Chemical and Environmental Engineering Program by Credit hours system

Article [1]: Granting Academic Degrees

Based on Faculty of Engineering Council request, Mansoura University grants a bachelor's degree in one of the following majors:

1. Biomedical Engineering
2. Communication and Computer Engineering
3. Mechatronics Engineering
4. Building and Construction Engineering
5. Chemical and Environmental Engineering

6. Renewable and Sustainable energy Engineering

7. Infrastructure and Environmental Engineering

Students are stipulated to complete the academic requirements necessary for one of these programs to obtain a B.Sc. degree in the required major. Study in these programs should take place in English within each specialization scope based on the credit hour system. Further, students should be aware of the requirements and regulations of each program and should be responsible for achieving them.

Article [2]: The Program Study System

The study system used in these programs is the American system of credit hours within the context of one semester.

Article [3]: The Credit Hour Standard According to the Reference Framework 2020

1. With regard to theoretical lectures:

One credit hour is calculated for every one hour per week lecture during one semester.

2. For practical lessons and practical exercises:

One credit hour is calculated for each 2-3-hour workshop or exercises per semester.

Article [4]: The Academic Council

The Program Management Academic Council shall be formed by a decision from the University President based upon the Faculty Council nomination for two-year- period headed by Faculty Dean and the membership of:

1. Vice Dean of Education and Student Affairs.
2. Heads of Scientific Departments concerned with the program.
3. Program Executive Director.
4. Professor or assistant professor from the specialized scientific departments nominated by the Dean after taking the opinion of the Head of the department and it is permissible in special cases to include two lecturers at most to the membership of the council.
5. Two experienced members either internal or external.

The academic council of the program will perform all the duties of the faculty scientific departments with respect to education and students' affairs. Further, the academic council shall observe the following criteria with regard to assigning teaching duties to staff members:

1. Scientific departments nominations based on their specialty.
2. Students' surveys on the previous times the course was taught.
3. The program management opinion according to performance evaluation and follow-up.

Article [5]: The Program Executive Director

For each program, an executive director shall be appointed by the University President, after a nomination by the Faculty Dean provided that he is one of the faculty members specialized in the field(s) of the program with associate / full professorship degree, for a minimum of two calendar years, renewable under the same conditions of the first appointment.

The executive director of the program shall perform the following tasks:

1. Implementing the program's internal regulation.

2. Coordination between the scientific departments in assigning teaching duties to faculty members.
3. Supervising students' academic registration.
4. Supervising the administrative work by the program staff.
5. Supervising the regularity of academic counseling in the program.
6. Following up the educational process regularity in accordance with the approved study schedules.
7. Supervising and regulating end-of-term and mid-term exams (if any).
8. Supervising field training and forming partnerships with distinguished training authorities.
9. Carrying out the secretariat of the council in the subcommittee of the academic council.
10. Organizing and supervising the program scientific conference.
11. Preparing the forms related to the financial duties in the program and submitting them to the higher management of the college.
12. Overseeing the development of the program's infrastructure, including runways, lecture halls, exercise halls, school laboratories and equipment.
13. Supervising the fulfillment of all quality assurance requirements in accordance with the standards of the National Authority for Accreditation and Quality Assurance of Education.
14. Preparing the annual self-study for the program to be presented to the Project Management Unit in the Ministry of Higher Education and Scientific Research.

Article [6]: Programs Coordinator for Digital Transformation

A programs coordinator for digital transformation is appointed by the Dean of the faculty after a nomination by the Faculty Vice Dean of student affairs (if three or more programs are available in the faculty) from the (associate) professors at the faculty having experience working with the credit hours' system and the programs for a period of two years' renewable with the same conditions of the first appointment.

The programs coordinator for digital transformation duties are:

1. Reviewing and auditing student registrations for all programs after approval of the relevant councils.
2. Reviewing the control works and fulfilling the final control stages after approval of the relevant councils.
3. Supervising the financial page follow-up for program students.
4. Reviewing the quality assurance work in the programs.

Article [7]: Registration Requirements and Entry Requirements

The student's registration for the bachelor's degree in these programs is required in addition to the general conditions stipulated in the executive regulations (Article 75) of the Universities Organizing Law as follows:

1. The student meets the admission requirements determined by the Supreme Council of Universities.

2. The student must have a high school completion certificate or its equivalent where major is in Mathematics.
3. The student fulfills the internal rules approved by the Faculty Board regarding the admission of students to these programs.

Article [8]: Transfer Conditions (change of course) and Re-enrollment

If the transfer is within the faculty, the transfer can occur before the start of the main semesters via approved rules by the faculty council and applied by the faculty representative for education and students affairs; while if the transfer is from another faculty within the university or from another university, the transfer is only through the central remittance office. At the beginning of the academic year, a student budget is made according to Table (1).

Table (1): The Symbol and Grade Corresponding to Assessment Obtained Degree by the Student when Converting from the Semester System to the Credit Hour System.

The percentage obtained by the student	Number of points	Estimate
Less than 50% (Failed)	00.0	F
40% to less than 50% (successful by clemency rules)	1.00	D
50% to less than 55%	1.00	D
55% to less than 60%	1.30	D+
60% to less than 65%	1.70	C-
65% to less than 68%	2.00	C
68% to less than 71%	2.30	C-
71% to less than 75%	2.70	B+
75% to less than 80%	3.00	B
80% to less than 85%	3.30	B+
85% to less than 90%	3.70	A-
90% to less than 95%	4.00	A
95% to 100%	4.00	A+

1. Transferring students who wish to enroll in one of the accredited programs specializations must have completed level (000) courses with an average grade of no less than 2,00 (maximum grade 4,00), and according to the rules determined by the faculty council and approved by the university council, based on the available capacity of the program.
2. Students who are transferred from the regular stream may be admitted to the same faculty, according to conditions determined by the Faculty Council and approved by the University Council based on the program's available capacity.
3. Students who have already spent two years in five years studying colleges outside of Faculty of Engineering, Mansoura University, and wish to join the program should submit a case statement from the faculty in which they were enrolled stating the degrees they have obtained and whether they have obtained credit hours or not.
4. It is permissible to accept international students who have obtained a high school diploma or its equivalent in every academic year according to the order of their degrees according to the nominations received by the Faculty from the General Administration of

International Students. Then, the faculty council undertakes a proposal in exchange for the cost of educational services other than the university fees prescribed for these students.

5. Students, who have previously left studying in the program for a period of up to four semesters at a maximum and who have already received high estimates in the period they spent, may re-register for the program if they wish to do so, after the approval of the relevant academic council and in accordance with the rules for regular study [11].

Article [9]: Obtaining the Degree Requirements

In order for the student to obtain a bachelor's degree in the aforementioned programs, Article [1]:

1. The student must successfully pass at least (160 credit hours).
2. The student must pass the graduation project.
3. The student must pass courses where the evaluation is Pass / Fail and does not count towards the student GPA such as summer training.
4. The distribution of subjects that are included in the study program for graduation requirements should be as follows:

Table (2) Distribution of the program hours to graduation requirements

Specialized Groups	Min %	Max%
University Requirements	8%	-
Faculty Requirements	20%	-
General Major Requirements	35%	-
Accurate Specialization Requirements	-	28%

Taking into account that the academic plans for each program achieve the courses and the indicative proportions set by the National Authority for Quality Assurance of Education, which includes the following curricula:

1. Social and Human Sciences
2. Business Administration
3. Mathematics and Basic Sciences
4. Engineering culture
5. Basic Engineering Sciences
6. Engineering and design applications
7. Project and field training

Article [10] Participating Scientific Departments

The academic council supervises, for each program, teaching of all the courses of the subprograms that follow it, including humanities, Arabic language and technical reports. The scientific departments assign teaching duties of the various courses after being approved by the faculty council. Teaching should be conducted through the following scientific departments, each in the scope of its major:

1. Electronics and Communications Engineering Department.
2. Computer Engineering and Control Systems Department.
3. Production Engineering and Mechanical Design Department.

4. Electrical Engineering Department.
5. power mechanical engineering Department.
6. Mathematics and Engineering Physics Department.
7. Structural Engineering Department - Public Works Department - Irrigation and Hydraulics Department.
8. Architecture Department.
9. External departments in the field of anatomy, physiology and public health from the Faculty of Medicine.
10. External departments in the field of organic chemistry, biochemistry, Microbiology and Pharmaceutical procedures from Faculty of Pharmacy.
11. External departments in the field of languages - Faculty of Education or Faculty of Arts – English Major.
12. External departments of the Faculty of Commerce in the field of management and marketing.
13. External departments of the Faculty of Law in the field of legislation and administration laws.

The academic council of the program administration approves the faculty members nominated by the concerned departments, and these nominations are presented to the faculty council for approval such that the language of study for all courses is English.

Article [11]: Study Duration and its Dates

The duration of the study in the program is ten main semesters for all students, and the student may finish studying the program in nine semesters (when the student has successfully passed 160 credit hours). The academic year is divided into two main semesters, each ending with an exam, according to the content stated in the curriculum schedules appended to this regulation.

The academic year is divided into three semesters:

1. The first semester: Autumn semester (main semester): It starts at the beginning of the university academic year for a period of 14 teaching weeks.
2. The second semester: Spring semester (main semester): It starts after the mid-year vacation of the university for a period of 14 teaching weeks.
3. Summer semester: It starts in July for a period of 7 teaching weeks doubling the course contact hours.

Enrolment and Registration take place before the start of each semester.

Article [12]: Study Regulations

All students enrolled in the program must adhere to the following university rules:

1. Tuition Fees

Registration fees and educational services are paid at the start of registration, and the faculty council determines the fees required for registration and educational services after they have been approved by the university council.

2. Payment Rules

The student is not allowed to register at the next level or know his result unless all tuition fees are paid to the lower level. Upon graduation, the student does not receive his papers and certificates indicating that the degree was awarded unless all the late tuition fees have been paid in full.

3. Attendance

The course professor records the attendance of students at the start of each theoretical lecture, or an exercise / practical workshop in a record prepared for that by the Student Affairs of the program, taking into account the following:

- A. The absence limit allowed for the students without an acceptable excuse is 25% of the total hours of the tutorials and labs of the course, and the course professor shall notify the Student Affairs Department to warn the student twice, the first warning is after the student exceeds the absence rate of 10% of the course hours, and the second warning is after exceeding the absence rate of 20%. Then, the student's case is presented to the academic council to take measures needed to prevent him from entering the course exam.
- B. If the student's absence rate exceeds 25% and the student's absence without an approved excuse is accredited from the academic council of the program, the student will score a deprived grade in the course and the result of a "deprived" grade will be included in the calculation of the student's semester grade and the overall GPA.

4. Partial Discontinuation Condition

Students must notify the academic advisor assigned to them by the academic council when they have stopped their studies for more than a week, and if the discontinuation is a result of illness, a "being sick declaration" must be submitted from an accredited governmental hospital or medical center that is approved by the university's medical administration within the specified times. If the student does not take the exam as a result of the illness, a "being sick declaration" must be introduced within the stipulated timings. In addition, a "being sick declaration" approved by the medical administration of the university must be introduced by whom the student's affairs will be notified of the expected absence period for the student.

5. Enrollment Stoppage

In case that the student stops his enrollment in one of the new programs, the student shall pay the related administrative fees.

6. Address Change

The student must notify the faculty administration of any change in his postal address.

7. Demurrage

If the student is late in paying the fees, the decisions approved by the College Board and the University Council in this regard will be applied.

Article [13]: Academic Registration and Academic Load

1. Registration

The academic council of the program announces the dates of registration in the academic curricula through the approved academic agenda. Students should review their choices with the academic advisors assigned to them according to the instructions written in the

program’s guide announced on the program’s website on the official university website. Registration will not be allowed after the specified date, and if the defaulters are allowed to register, this will be accompanied by a delay fine after being submitted to the academic council.

2. Advertising

Information on registration steps is announced in advance of each semester (Academic Agenda).

3. Academic Load Per Semester

The minimum and maximum number of credit hours a student is allowed to register in one semester is determined as follows:

Table (3): The Maximum Registration

No	Student's GPA	Maximum Registration
1	$GPA < 2$	Up to 14 Credit hours
2	$2 \leq GPA < 3$	Up to 18 Credit hours
3	$3 \leq GPA$	Up to 21 Credit hours

- A. The minimum number of hours a student is allowed to register in **Fall** and **Spring** semesters is 12 credit hours, except for graduation or stumbling cases (under academic observation) based on the approval of the Academic Council.
- B. Students may register some courses in the summer semester with a maximum of two courses and up to 3 courses in case of graduating in the summer semester. In all cases, graduation projects may not be registered during the summer semester.

Article [14]: The Academic Adviser

The academic council of the program appoints an academic advisor from the teaching staff, at the rate of an academic advisor per 25 students, to guide students in their study trajectory and help them choose the academic courses. Further, he or she determines the number of credit hours they can register according to their circumstances, abilities and academic readiness, and help them solve encountered problems during the study. Besides, he or she supervises the students' study programs, monitoring their progress and monitoring their performance as part of the educational process.

- 1. The academic advisor meets with his/her students periodically to avoid students being exposed to academic warning.
- 2. No administrative procedures are taken for any student except through the academic advisor and with his written approval.
- 3. Each academic advisor determines a time period in his study schedule every week, and a report of this meeting is prepared and submitted to the program management.
- 4. Students must obtain the approval of the academic advisor assigned to them in choosing a study trajectory before registering for courses in each semester and in the summer semester.

Article [15]: Addition, Deletion and Retraction

- 1. After registration, the student may add or delete one of the courses in ways and steps that are approved by the academic council of the program.

2. The student may, after the approval of the academic advisor, unregister one or more courses until the end of the fourth week of study only, without violating the academic load stipulated in Article [13].
3. After the approval of the academic advisor, the student may withdraw from studying any course until the end of the tenth week of the start of registration for the autumn or spring semester (third week of the summer semester). This course is recorded in the student's academic record with a grade of W "withdrawn", provided that the student has not exceeded the percentage of absence prescribed before withdrawal, provided that the withdrawal does not violate the academic load stipulated in Article [13].

4. Re-registration

The student is allowed to re-register in the study course in which he previously obtained an estimate of **F**, and he is allowed to attend the course and repeat the exam in accordance with the financial regulations that specify that, where the maximum allowed estimate is **B +**.

5. Elective Courses

In case that the student registers an elective course and fails and registers the same course again, the student gets the maximum grade of **B +**, while in the case of changing the elective course, the student gets the newly obtained degree.

Article [16]: Projects

1. Students prepare 2-3 projects in specific topics related to local industries and service to the surrounding community, to be determined by the Academic Council and during the last two academic years according to what is found in the special tables of the program curricula, and under the supervision of faculty members who to prepare, supervise and discuss projects.
2. The last project, called the Graduation Project, is prepared in the last semester, culminating in what the student has studied during the university years.
3. It is permissible that the Academic Council decide to allocate an additional period for the graduation project that begins after the completion of the last semester exam for a period of one month, and at the end of the period allocated to any of the projects the student submits a scientific report on the subject of the project and discusses it.
4. The student cannot obtain a bachelor's degree unless he successfully performs all the prescribed projects.

Article [17]: Practical and Field Training

The program includes a training system during the summer vacation for students transferred to levels 200, 300 and 400 and under the supervision of faculty members, as follows:

1. **Practical Training:** students transferred to level 200 will perform a practical training within the faculty or in specialized training centers and units within the faculty for a period of two weeks with a total number of hours of not less than 60 hours. The student should get a practical training completion certificate.
2. **Field Training:** students transferred to level 300 and those to level 400 perform field training within specialized sectors outside the faculty for a period of four weeks with a total number of hours of at least 120 hours. The student must obtain a certificate from the training authority stating his attendance and obtained the required experience.

3. The faculty is responsible for obtaining training opportunities for students, and students may get training opportunities for themselves, but after faculty council approval is obtained.
4. It is permissible to train students abroad based upon the program academic council approval. The student does not obtain a bachelor's degree unless he has successfully completed both practical and field training.
5. In all training cases, the student is given a Pass/Fail estimate only and his grade is not added to the total grade, but a Pass grade is required to obtain the course degree. The student who reaches level 400 without successfully completing his training can repeat the training any number of times until he passes the training.

The college should provide training opportunities for students in each major through cooperation protocols with companies or through its industrial advisory board.

Article [18]: Optional Courses

The student is not allowed to register at any of the elective courses unless he is at the planned level and to achieve all the requirements of the pre-requisites, and in all cases the academic advisor must review the registration of the students and remove any wrong registration.

Article [19]: Courses Registration Synchronization

Fourth level students and students subject to dismissal can register a course in conjunction with the previous prerequisite for the course after obtaining the approval of the program academic council if the following conditions are met:

1. The student has previously studied this prerequisite and received an **F** grade.
2. This registration does not violate the registration rules according to the GPA.

Article [20]: The Evaluation System

1. Each course is evaluated from (100) one hundred marks.
2. The student is evaluated in theoretical and practical courses based upon the following elements:
 - A. In the case of decisions that include only a theoretical study, the evaluation is as follows:

Table (4) Distribution of degrees for courses that include theoretical study only

Evaluation		Degree
Semester works	Mid-term exam	20%
	Short exams	30%
	Assignments (report)	
	Presentation and discussions	
Semester Exam (Written)		50%

B. In the case of study courses that include a theoretical and practical study, the evaluation is as follows:

Table (5) Distribution of degrees for courses that include theoretical and practical study

Evaluation		Degree
Semester works	Mid-term exam	20%
	Short exams	20%
	Assignments (report)	
	Presentation and discussions	
Practical Exam	10%	
Semester Exam (Written)		50%

C. In the case of the Project Course, 50% of the degree is allocated to periodic follow-up, 50% for oral discussion.

D. For a student to succeed in any course, he or she must obtain at least 60% of the total score and must have obtained at least 40% of the final written examination score.

Article [21]: Degrees and Grades Digital and Symbolic Significance

A. The degrees obtained by the student in each course are estimated as shown in the following table:

Table (6) Table of numerical and symbolic implications of degrees and grades

The Student's Obtained %	Equivalent Degrees Range					Points No	Grade
From 97% or more	97	98	99	100	--	4,00	A+
93% to less than 97%	93	94	95	96	—	4.00	A
89% to less than 93%	89	90	91	92	—	3.70	A-
84% to less than 89%	84	85	86	87	88	3.30	B+
80% to less than 84%	80	81	82	83	—	3.00	B
76% to less than 80%	76	77	78	79	—	2.70	B-
73% to less than 76%	73	74	75	—	—	2.30	C+
70% to less than 73%	70	71	72	—	—	2.0	C
67% to less than 70%	67	68	69	—	—	1.7	C-
64% to less than 67%	64	65	66	—	—	1.3	D+
60% to less than 64%	60	61	62	63	—	1.0	D
Less than 60%						0.0	F

B. The course grade is calculated by multiplying the number of credit hours for the course by the number of assessment points (according to Table 6) that the student obtained in this course.

C. The following grades do not fall within the calculation of the average estimate, Table No. (7).

Table (7): Grades Completion

W	Formal Drop out
AU	listener
I	Incomplete
F	Unsuccessful
P	successful

a. Semester GPA:

For each course, the total score of the course is equal to the multiplication of both the number of credit hours of the course and the number of course points.

The semester average = the total points for the courses in which the student scored in the semester divided by the number of credit hours for these courses.

$$\text{Semester GPA} = \frac{\text{Number of Points}}{\text{Number of Graded Hours}} = \frac{\sum_{i=1}^N \text{Grade}_i \times \text{Hours}_i}{\sum_{i=1}^N \text{Hours}_i}$$

b. Cumulative GPA

The GPA is calculated as follows:

GPA = the sum of the points for the courses divided by the total number of hours for the courses

$$\text{Cumulative GPA} = \frac{\text{Number of Points}}{\text{Number of Graded Hours}} = \frac{\sum_{i=1}^N \text{Grade}_i \times \text{Hours}_i}{\sum_{i=1}^N \text{Hours}_i}$$

c. Total Cumulative Calculation

The total cumulative is calculated as follows for the number of N courses:

For each course the total equivalent of the course scores is calculated equal to the number of credit hours for the course multiplied by the course score.

Cumulative total percentage is equal to the equivalent of the course grades divided by the total number of hours for the courses:

$$\begin{aligned} \text{Cumulated Marks \%} &= \frac{\text{Equivalent Accumulated Marks}}{\text{Number of Graded Hours}} \\ &= \frac{\sum_{i=1}^N \text{Mark}_i \times \text{Hours}_i}{\sum_{i=1}^N \text{Hours}_i} \times 100 \end{aligned}$$

d. Requirements Condition are met

For enrollment in courses requiring other courses as pre-requisites, the student's grade in the pre-requisites should not be less than D.

Article [22]: Graduation Students Grades

The grades obtained by the student upon graduation are granted according to the following schedule:

Table (8) Estimates Granted upon Graduation from the Program with Credit Hours System

The student's obtained percentage	Equivalent Degrees Range	Estimate	Equivalent grade
97% or more	4.00	A+	Excellent
93% to less than 97%	4.00	A	
89% to less than 93%	3.70	A-	
84% to less than 89%	3.30	B+	Very good
80% to less than 84%	3.00	B	
76% to less than 80%	2.70	B-	
73% to less than 76%	2.30	C+	Good
70% to less than 73%	2.0	C	

Article [23]: Honors Grade

1. Mansoura University grants a certificate of excellence to students who have obtained an average rating of 3.6 or more in previous semesters, provided that they have not failed any course during the study, and this distinction is recorded in the student's academic record.
2. Upon graduation, the student is awarded the honor degree if he obtains an average grade of 3.3 or more in all major semesters without failing any course.

Article [24]: Grades Statement

Students who obtain a degree or who drop out from the program have the right to obtain a statement of grades for their academic record, and this statement cannot be obtained during the period of exams, registration, or the date of graduation, and grades data are not given when tuition fees are not paid.

Article [25]: Academic Warning, Transferring and Dismissals

1. The student is warned academically if he obtains a GPA of less than 2 at the end of the second semester of his enrollment in the study or any other semester after that.
2. The student who is academically warned is placed under academic supervision and is not allowed to register more than 12 credit hours, and the monitoring is stopped if the GPA improves and exceeds the GPA 2.
3. A student who is academically dismissed shall be dismissed from credit hour programs if his cumulative GPA falls below 2.00 for six consecutive main semesters.
4. If the student does not meet the requirements for graduation during the maximum period of study, which is ten years, he will be dismissed.
5. The Faculty Council may consider the possibility of granting a student, subject to dismissal due to his inability to raise his cumulative GPA to at least 2.00 at least, one and last chance of two main semesters to raise his cumulative GPA to 2.00 and fulfil graduation requirements, if he has at least successfully completed 80% of the credit hours required for graduation.
6. A student who registers for 17 or more credit hours is considered a regular student, and the student's position in the study is defined according to Table No. (9).

Table (9):The Student's Position Based upon the Number of Credit Hours Passed

Academic level	Defining the student's Place in the study system	The number of credit hours the student has successfully passed	
		<	>=
1	Freshman	32	0
2	Sophomore	64	32
3	Junior	112	64
4	Senior	160	112

Article [26]: Graduation and Obtaining the Degree

For the student to obtain a bachelor's degree:

1. The student must have completed at least 160 credit hours in all programs and 163 credit hours in the Building and Construction Engineering Programs in studying the courses with a grade of no less than **D**.
2. His average grade should not be less than C or more in the cumulative average, and this means that he will obtain at least a cumulative average of 2.00 / 4.00.
3. The student fulfills all program requirements.
4. Immediately after these conditions are fulfilled, the student's condition will be transferred to a graduate and he may not register any other courses under any of the above items.

Article [27]: Transferring Students -to and from- the Program System

After approval of the academic council for the program and the Mansoura University Council, it is permissible to transfer students to and from the program with the accredited engineering faculties provided that a clearing is made between the courses studied by the student and the courses that he must study and succeed in, and to complete the clearing process the degrees equivalent to the grades specified in the credit hour system are used as shown in Table (1). Table (10) is used to calculate grades when converting from the credit hour system to faculties that do not use the credit hour system.

Table (10):Equivalence of Estimates when Convertingfrom the Credit Hour System to the Two-SemesterSystem

Credit Hour System		The Semester System	
Number of points	Estimate	Equivalent Estimate	Equivalent Percentage
4.00	A +	Excellent	99%
4.00	A		95%
3.70	A-		91%
3.30	B+	Very Good	86%
3.00	B		82%
2.70	B-	Good	78%
2.30	C+		75%
2.0	C		72%
1.7	C-		69%
1.3	D+	Passed	66%
1.0	D		62%
0.0	F		Failed

Article [28]: Appointing Graduates of the Program as a Demonstrators (Teaching Assistants)

1. Teaching assistants from the graduates of the program are appointed via a decision from the University President upon the request of the Faculty Council in accordance with

Article (133) of Law No. 49 of 1972 regarding the organization of universities and without violating the application of Articles 135 and 136 of the same law.

2. The Faculty Council distributes teaching assistants newly graduated from the programs to the faculty scientific departments corresponding to their majors and based upon the previously presented annual plan of scientific departments

Article [29]: The Listening System

It is permissible to accept listening students in any of the courses if there are vacant places provided that the listening student cannot perform the exam, or obtain credit hours for joining this course, or can he obtain an attendance statement for the course from the faculty. They may register late after completing the registration for regular students.

Article [30]: The Improvement System

1. The student is allowed to improve in (5) subjects to raise the GPA during the study period, provided that the student gets the last grade, and it is not permissible to drop out from the course after the end of the official period in which withdrawal is permitted without an academic impact (the fourth week of the main semesters). As the expiration of this period entails the removal of the first estimate.
2. If the student has completed his studies in the program and his GPA is less than 2, he may improve any of the previously studied subjects until he reaches the required minimum of the GPA.
3. The student may not improve a failed course.

Article [31]: Disciplinary Rules

Students who are enrolled in the program are subject to the disciplinary system outlined in the University Regulatory Law and its executive regulations.

Article [32]: Electronic Administration

The university designs or contracts with an information administration system for the program to automate the work of the program with a credit hour system. The following conditions are required in this program:

1. Course registration.
2. Adding and removing courses.
3. Academic Advising.
4. program administration work in achieving the rules governing the program.
5. Grades control work.
6. Study work and exams.
7. Financial benefits.
8. Student affairs work.
9. Statement of the situation.
10. Student performance reports.
11. Record the absence of students.
12. E-exams.

13. Communication with students

Taking into account the preservation of confidentiality of data and its recall, ease of use for the student, faculty member and administrative team, and the availability of technical support.

Article [33]: Incomplete Courses

If a student request not to attend the final exam where he shows compulsive reasons why not to attend, is accepted by the academic council of the program and the faculty council, within two days at most from the final examination date, the course is considered incomplete with an estimate (I) in this course provided that he has obtained at least 60% of the coursework degree or he has been deprived of entering the final exam, in which case he will have the opportunity to take the final exam in the next semester and at the date determined by the faculty council, which is usually in the first week of the next academic semester directly. The degree of the semester work obtained by the student during the semester is added to the final theoretical exam degree which is conducted by the student.

Article [34]: Appeals for the Results of the Courses

The student can appeal to review the grades of the course within a week of announcing the result, after paying the fees determined in accordance with the overall regulations associated with this matter.

Article [35]: Implementing the Provisions of the Law Regulating Universities

The provisions of these regulations apply from the academic year following the date of their issuance to new students admitted to the faculty at the level (000) of those programs, and these regulations do not apply retroactively to any student in the faculty.

Article [36]: General Rules

1. The rules of the Universities Regulatory Law, its executive regulations, the internal regulations of the college, and other university regulations are applied in the absence of a text in these regulations.
2. The student is subject to the general system of the university and the college, and the rules of dismissal from the university, opportunities for re-enrollment, acceptable excuses for not taking the exam, stopping the academic registration, and all the rules, laws and regulations regarding student discipline as stipulated in the Universities Organization Law and its implementing regulations are applied to him/her.
3. The faculty is permitted to add to the list of elective courses with the approval of the Faculty Board and without the need to return to the Engineering Sector Committee.
4. The Faculty Council agrees to change the scientific content of the course in a manner that does not conflict with the course name and objectives.

Article [37]: Transitional Rules

1. The provisions of these regulations shall be applied to new preparatory year students and those covered by the decisions of the University Council that regulate the enrollment of students in the credit hour programs, starting from the academic year following the issuance

of the ministerial decision related to this regulation, and then applied sequentially to the remaining academic years.

2. When the provisions of these regulations are applied to any academic year, work shall apply to the remaining students for repetition, re-enrollment and applicants for the examination from abroad, and the College Board shall adjust the status of these students in the light of this regulation and the previous one.

4. The Courses of Infrastructure and Environmental Engineering Program by Credit hours system

4.1 Course Coding System

The following figure shows courses coding system according to reference framework NARS 2018, where the course code is composed of three letters and three digits. The letters indicate the course specialization department. The first digit indicates the year 0, 1, 2, 3, or 4. The second digit between 1 and 9 displays the discipline in the major. The third digit is the course sequence in each discipline. The following must be considered:-

1. The letters indicate the majors in which the degree is given but some of these represent university requirements, college requirements, or specialized courses.
2. Course descriptions refer to the semester in which this course is usually given, but these dates are subject to change, as not all courses are taught every year, and before the start of each semester, college affairs show students the courses tables that will be taught in this semester, their teaching times and those in charge of teaching

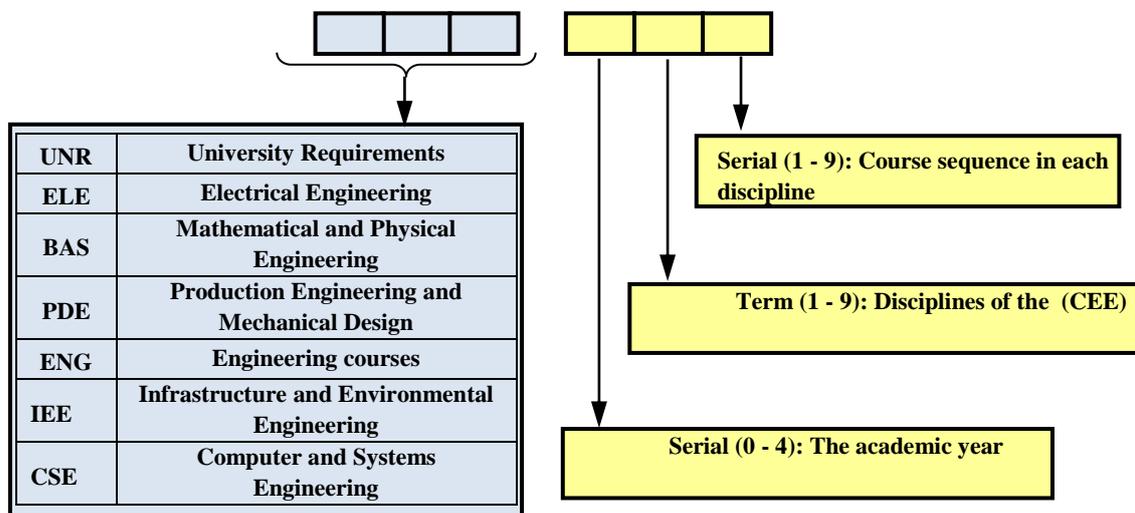


Figure (1): Courses coding system

4.2 The Program Plan Description

The study plan of the IEE Program at the College of Engineering, Mansoura University involves different requirements for the university, the college, and the department, as well as courses which satisfy these requirements. Also, the study plan includes the credit units for all courses and the distribution of these credit units on the Five studying levels (Years).

To prepare the student for the above targeted Educational Objectives, a set of program outcomes, that describes what students are expected to know and is able to do by the time of graduation, have been adopted. The student must successfully pass a number of courses totaling 160 credit hours in order to obtain a bachelor's degree in chemical and environmental engineering from the Faculty of Engineering, Mansoura University.

4.2.1. The University Requirements

The main purpose of university education is not only to prepare students for successful careers but also to provide them with the knowledge and skills necessary to develop a rational and successful personal identity. In addition, Mansoura University assists students in gaining an appreciation of the natural and cultural environments in which they live and their roles in society and community services. The university's requirements for bachelor's programs consist of 13 credit hours (8.12% of the total 160 credit hours), which are met by completing six (6) courses. Tables (11), shows the courses credit units, Total SWL and marks distribution for the university.

Table (11): The University Requirements (13 Credit)

Code	Course Name	Credit	Total SWL	Marks Distribution			
				Mid Term	semester Works	Lab	Final
UNR061	English (1)	2	5	20	30	--	50
UNR062	English (2)	2	5	20	30	--	50
UNR171	History of Engineering and Technology	1	2	20	30	--	50
UNR281	Law and Human Rights	2	4	20	30	--	50
UNR241	Communication and Presentation Skills	2	5	20	30	--	50
UNR461	Ethics and Morals of The Profession	2	4	20	30	--	50
UNR471	Marketing	2	4	20	30	--	50
Total		13	29				

4.2.2 The College Requirements

Table (12) indicate the college requirements which contain basic science courses and basic engineering science courses.

Table (12): The College Requirements (45 Credit)

Code	Course Name	Credit	Total SWL	Marks Distribution			
				Mid Term	semester Works	Lab	Final
BAS011	Mathematics (1)	3	8	20	30	--	50
BAS021	Mechanics (1)	3	8	20	30	--	50
BAS012	Mathematics (2)	3	8	20	30	--	50

BAS022	Mechanics (2)	3	8	20	30	--	50
BAS031	Physics (1)	3	9	20	20	10	50
BAS032	Physics (2)	3	9	20	20	10	50
BAS041	Principles of Engineering Chemistry	3	9	20	20	10	50
PDE051	Principles of Manufacturing Engineering	3	8	20	20	10	50
PDE052	Engineering Drawing	3	10	20	30	--	50
ENG111	Technical Reports Writing	2	6	20	30	--	50
BAS113	Mathematics (3)	3	8	20	30	--	50
BAS114	Mathematics (4)	3	8	20	30	--	50
BAS115	Statistics and Probability Theory	2	6	20	30	--	50
ELE151	Electrical Power and Machines	3	8	20	30	--	50
BAS215	Mathematics (5)	3	8	20	30	--	50
ENG412	Project Management	2	6	20	30	--	50
Total		45	127				

4.2.3. The Program Requirements (Core Courses)

Table (13) shows the courses distribution according to the specializations in IEE which include:

- Basic courses in chemical engineering
- Transport Phenomena and Separation processes
- Modeling and design operations courses
- Elective Courses
- Training and graduation projects

Table (13): Compulsory Courses for General and Specific Specialization Requirements for Infrastructure and Environmental Engineering (76 credit hours, 48.125% of the total 160 credit hours)

Code	Course Name	Credit Hours
PWE 001	Environmental Pollution and its Methods of Measurement	2
STE 101	Structural Analysis (1)	3
STE 102	Reinforced Concrete (1)	3
STE 103	Properties and strength of Materials	3
IRE 101	Civil Drawing	3
PWE111	Plane Surveying	3
PWE 121	Engineering Geology and Soil Mechanics	3
PWE 201	Characterization of Road Materials	3
PWE 202	Asphalt Materials	3
STE 203	Soil Mechanics and Foundation	3
IRE 201	Hydrology and fluid mechanics	3
MPE 201	Electromechanical Equipment and Machines	3
PWE 211	Topographic Surveying and Geodesy	3

PWE 212	Introduction to Photogrammetry and Remote Sensing	3
PWE 214	Environmental Impact Assessment and Project Life Cycle	3
PWE 222	Transportation and Traffic Engineering	3
ARE 301	Building Construction	3
STE 301	Design of steel Structures	3
PWE 321	Infrastructure Project Equipment and Construction Methods	3
PWE 322	Structural Design of Flexible Pavement	3
PWE 323	Geometric Design of Highways	3
PWE 331	Drinking Water Supply Purification and Networks	3
PWE 332	Wastewater Treatment and Networks	3
PWE 333	Solid Waste Management and Treatment	3
PWE 341	Railway Engineering	3
PWE 441	Water Surveying	2

4.2.4. Elective Courses

Tables (14) and (15) shows a list of elective courses that a student can choose for elective courses.

Table 14: Elective Courses for Specific Specialization Requirements for Infrastructure and Environmental Engineering (18 credit hours, 11.25% of the total 160 credit hours) – Elective Courses for 300 Level (2 courses only)

Code	Course Name	Credit Hours
STE 302	Structural Analysis (2)	3
STE 303	Reinforced Concrete (2)	3
STE 304	Structural Design of Water Tanks	3
STE 305	Design of Bridges and Concrete Tunnels	3
STE 306	Specifications, Quantities and Contracts	3
ARE 302	Urban and Regional Planning	3
PWE 312	Theory of Errors and Global Positioning with Satellites (GPS)	3
PWE 313	Photogrammetry and Remote Sensing	3
PWE 314	Tunnels and Mines Surveying	3
PWE 315	Engineering and Applied Geodesy	3
PWE 316	Physical Geodesy	3
PWE 324	Airport Planning and Design	3

Table 15: Elective Courses for Specific Specialization Requirements for Infrastructure and Environmental Engineering (18 credit hours, 11.25% of the total 160 credit hours) – Elective Courses for 400 Level (4 courses only)

Code	Course Name	Credit Hours
PWE 411	Geology of Rocks and Groundwater Reservoirs	3
PWE 412	Structural Design of Rigid Pavement	3
PWE 413	Pavement Maintenance and Rehabilitation	3
PWE 422	Regional and Urban Transport Planning	3
PWE 423	Intelligent Transport Systems	3
PWE 424	Cargo Transportation, Freight and Container Systems	3
PWE 425	Modern Trends of Designing and Evaluating Asphalt Mixtures and Pavement Maintenance Management	3
PWE 431	Water Desalination Systems	3
PWE 432	Industrial Wastewater Treatment	3
PWE 433	Biological Treatment	3
PWE 442	Geographic Information Systems and Their Applications in Infrastructure Projects	3
PWE 443	Computer Applications in Engineering Projects	3

Table 16: Graduation Projects and Field Training (8 credit hours, 4.375% of the total 160 credit hours)

Code	Course Name	Credit Hours
PWE 351	Field Training (1)	1
PWE 451	Field Training (2)	1
PWE 461	Graduation Project (1)	3
PWE 462	Graduation Project (2)	3

4.3 The Semester Contents of the Infrastructure-Engineering Program

The curriculum presents the credit units weekly contact hours either for lectures, tutorial and practical work for all courses. The curriculum also presents SWL and Marks distribution in addition to the senior project the summer training according to **NARS 2018**. It is clear from the table that the total contact hours (lectures + tutorial+ practical) in addition to the hours of self-learning range from 44 to 49 hours per week for all levels with an average of 46 hours per week.

LEVEL 000**First Semester**

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
BAS011	Mathematics (1)	3	2	2	--	4	8	20	30	--	50	100	---
BAS021	Mechanics (1)	3	2	2	--	4	8	20	30	--	50	100	---
BAS031	Physics (1)	3	2	1	1.5	4.5	9	20	20	10	50	100	---
BAS041	Principles of Engineering Chemistry	3	2	1	1.5	4.5	9	20	20	10	50	100	---
PDE052	Engineering Drawing	3	2	2	--	6	10	20	30	--	50	100	---
UNR061	English (1)	2	1	2	--	2	5	20	30	--	50	100	---
Total		17	11	10	3	25	49					600	
Total Contact hours = 24 hours/week Total SWL = 49 hours/week													

Second Semester

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
BAS012	Mathematics (2)	3	2	2	--	4	8	20	30	--	50	100	BAS011
BAS022	Mechanics (2)	3	2	2	--	4	8	20	30	--	50	100	BAS021
BAS032	Physics (2)	3	2	1	1.5	4.5	9	20	20	10	50	100	-----
PWE041	Environmental Pollution and its Methods of Measurement	2	2	--	1.5	4.5	8	20	20	10	50	100	-----
PDE051	Manufacturing Engineering Principles	3	2	--	3	3	8	20	20	10	50	100	-----
UNR062	English (2)	2	1	2	--	2	5	20	30	--	50	100	UNR061
Total		16	11	7	6	22	46					600	
Total Contact hours = 24 hours/week Total SWL = 46 hours/week													

LEVEL 100**Third Semester**

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
BAS113	Mathematics (3)	3	2	2	--	4	8	20	30	--	50	100	BAS012
BAS115	Probability Theory and Statistics	2	1	2	--	3	6	20	30	--	50	100	BAS012
STE 101	Structural Analysis (1)	3	2	2	--	5	9	20	30	--	50	100	-----
IRE 101	Civil Drawing	3	2	2	--	4	8	20	30	--	50	100	PDE052
PWE111	Plane Surveying	3	2	--	2	5	9	20	20	10	50	100	-----
ENG 111	Writing of Technical Reports	2	1	2	--	3	6	20	30	--	50	100	UNR061
Total		16	10	10	2	24	46					600	
Total Contact hours = 22 hours/week Total SWL = 46 hours/week													

Fourth Semester

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
BAS114	Mathematics (4)	3	2	2	--	4	8	20	30	--	50	100	BAS113
STE102	Reinforced Concrete (1)	3	2	2	--	4	8	20	30	--	50	100	STE101
STE103	Properties and strength of Materials	3	2	1	1	5	9	20	20	10	50	100	-----
PWE121	Engineering Geology and Soil Mechanics	3	2	2	--	5	9	20	30	--	50	100	-----
ELE151	Electromechanical Equipment and Machines	3	2	2	--	4	8	20	30	--	50	100	BAS032
UNR 171	History of Technology Engineering	1	1	--	--	1	2	20	30	--	50	100	-----
Total		16	11	9	1	23	44					600	
Total Contact hours = 21 hours/week Total SWL = 44 hours/week													

LEVEL 200**Fifth Semester**

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
BAS215	Mathematics (5)	3	2	2	--	4	8	20	30	--	50	100	BAS113
PWE211	Topographic Surveying and Geodesy	3	2	1	1	4	8	20	20	10	50	100	PWE111
UNR241	Communication and Presentation Skills	2	1	2	--	2	5	20	30	--	50	100	-----
PWE214	Environmental Impact Assessment and Project Life Cycle	3	2	2	--	4	8	20	30	--	50	100	PWE041
PWE 201	Characterization of Road Materials	3	2	2	--	5	9	20	30	--	50	100	-----
IRE201	Hydrology and fluid mechanics	3	2	2	--	4	8	20	30	--	50	100	-----
Total		17	11	11	1	23	46					600	
Total Contact hours = 23 hours/week Total SWL = 46 hours/week													

Sixth Semester

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
PWE212	Introduction to Photogrammetry and Remote Sensing	3	2	1	1	5	9	20	20	10	50	100	-----
STE203	Foundation and Soil Mechanics	3	2	2	--	5	9	20	30	--	50	100	PWE121
MPE201	Electromechanical	3	2	2	--	2	6	20	30	--	50	100	BAS032
UNR281	Law and Human Rights	2	2	--	--	2	4	20	30	--	50	100	-----
PWE202	Asphalt Materials	3	2	2	--	5	9	20	30	--	50	100	PWE121
PWE222	Transportation and Traffic Engineering	3	2	2	--	4	8	20	30	--	50	100	-----
PWE351	Field Training (1)	1	--	--	3	--	3	--	50	--	50	100	-----
Total		18	12	9	4	23	48					700	
Total Contact hours = 25 hours/week Total SWL = 48 hours/week													

LEVEL 300**Seventh Semester**

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
Elective	Elective Course (1)	3	2	2	--	5	9	20	30	--	50	100	Depends
ARE301	Building Construction	3	2	2	--	5	9	20	30	--	50	100	IRE101
PWE322	Structural Design of Flexible Pavement	3	2	2	--	4	8	20	30	--	50	100	PWE201
PWE331	Drinking Water Supply Purification and Networks	3	2	2	--	4	8	20	30	--	50	100	PWE041
PWE321	Infrastructure Project Equipment and Construction	3	2	2	--	4	8	20	30	--	50	100	STE102
STE301	Design of steel Structures	3	2	2	--	4	8	20	30	--	50	100	-----
Total		18	12	12	--	26	50					600	
Total Contact hours = 24 hours/week Total SWL = 50 hours/week													

Eighth Semester

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
Elective	Elective Course (2)	3	2	2	--	5	9	20	30	--	50	100	Depends
PWE322	Railway Engineering	3	2	2	--	4	8	20	30	--	50	100	-----
PWE323	Geometric Design of Highways	3	2	1	1	5	9	20	20	10	50	100	PWE111
PWE333	Solid Waste Management and Treatment	3	2	2	--	4	8	20	30	--	50	100	PWE041
PWE332	Wastewater Treatment and Networks	3	2	2	--	4	8	20	30	--	50	100	PWE041
PWE451	Field Training (2)	1	--	--	3	--	3	--	50	--	50	100	-----
Total		16	10	9	4	22	45					600	
Total Contact hours = 23 hours/week Total SWL = 45 hours/week													

LEVEL 400**Ninth Semester**

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
Elective	Elective Course (3)	3	2	2	--	5	9	20	30	--	50	100	Depends
Elective	Elective Course (4)	3	2	2	--	5	9	20	30	--	50	100	Depends
ENG412	Project Management	2	1	2	--	3	6	20	30	--	50	100	-----
PWE441	Water Surveying	2	2	--	--	4	6	20	30	--	50	100	PWE211
PWE461	Graduation Project (1)	3	2	--	--	8	10	--	50	--	50	100	-----
Total		13	9	6	--	25	40					600	
Total Contact hours = 15 hours/week Total SWL = 40 hours/week													

Tenth Semester

Code	Course Name	Hours/Week						Marks Distribution					Prerequisites
		Credit	Lecture	Tutorial	Lab.	Free Work	SWL	Mid Term	Semester Work	Lab	Final Exam	Total	
Elective	Elective Course (5)	3	2	2	--	5	9	20	30	--	50	100	Depends
Elective	Elective Course (6)	3	2	2	--	5	9	20	30	--	50	100	Depends
UNR461	Etiquette and Professional Ethics	2	2	--	--	3	5	20	30	--	50	100	-----
UNR471	Marketing	2	2	--	--	2	4	20	30	--	50	100	-----
PWE462	Graduation Project (2)	3	4	2	--	6	12	--	50	--	50	100	-----
Total		13	12	6	--	21	39					500	
Total Contact hours = 18 hours/week Total SWL = 39 hours/week													