

دليل أساليب التعليم والتعلم ومقترح طرق التدريس



دليل أساليب التعليم والتعلم ومقترح طرق التدريس

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1/ أساليب التعليم والتعلم في برنامج الهندسة المدنية وربطها بالمقررات ومواصفات الخريج 2020

تتعدد أساليب التعليم والتعلم في البرنامج بحيث تحقق مواصفات الخريج ومخرجات التعلم المستهدفة ، ومن هذه الأساليب ما يلي:

1- أسلوب التعلم التعاوني.

☐ التعليم القائم على المشروعات الجماعية.

☐ التعليم القائم على الأبحاث الجماعية.

☐ العصف الذهني.

2- أسلوب التعلم التفاعلي.

☐ الدراسة الذاتية.

☐ كتابة التقارير والأبحاث.

☐ حل المشكلات.

3- أسلوب التعلم الإلكتروني.

4- أسلوب التعلم التجريبي.

5- أسلوب التعلم الذاتي.

6- أسلوب التعلم الغير مباشر.

7- أسلوب التعلم البحثي.

8- أسلوب المناظرة.

نظرا لطبيعة المرحلة القادمة وفي خلال العام الدراسي 2020-2021 وما يتطلبه من اجراءات احترازية هامة وضرورة تطبيق إجراءات التباعد الاجتماعي وتقليل أعداد الطلاب ، تم تحديث استراتيجيات التعليم والتعلم لتتبنى هذه الاستراتيجيات طرق التعليم الهجين ، وبالتالي فإن أسلوب التعلم الذاتي يكون له أهمية خاصة ولذلك فقد تم تحديث طرق التعلم في بعض المقررات للتعلم الذاتي.

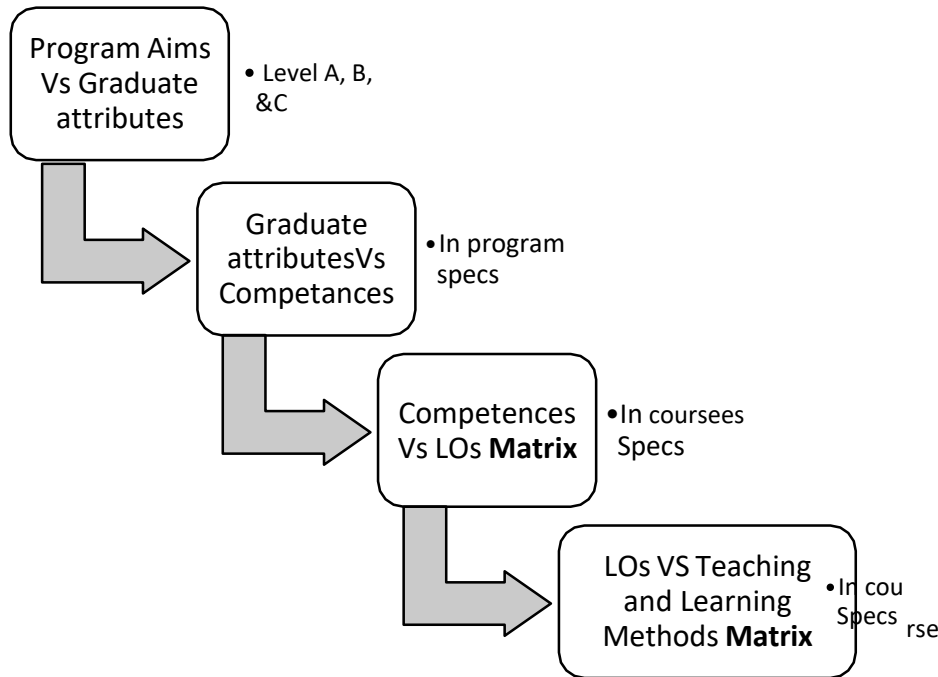
1/1 أساليب التدريس والتعلم

تم إعداد كتيب لاستراتيجيات التدريس المتبعة في الكلية لشرح وتوضيح هذه الاستراتيجيات وتم اعتماده في مجلس الكلية.

1/ 2 طرق التدريس والتعلم للطلاب ذوي الاحتياجات الخاصة

1. محاضرات اضافية

2. محاضرات وواجبات Online



3/1 مواصفات الخريج (Graduate attributes)

After completing the program, the program graduate will be able to:

To achieve the program mission and aims, program graduates should be able to:

- GA 1- Master a wide spectrum of engineering knowledge and specialized skills and can apply acquired knowledge using theories and abstract thinking in real life situations.
- GA 2- Apply analytic critical and systemic thinking to identify, diagnose and solve civil engineering problems with a wide range of complexity and variation.
- GA 3- Behave professionally and adhere to civil engineering ethics and standards.
- GA 4- Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance.
- GA 5- Recognize his/her role in promoting the civil engineering field and contribute in the development of the civil profession and the community.
- GA 6- Value the importance of the environment, both physical and natural, and work to promote sustainability principles.
- GA 7- Use techniques, skills, and modern engineering tools necessary for civil engineering practice.
- GA 8- Assume full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capacity to engage in post- graduate and research studies.

- GA 9- Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner.
- GA 10- Demonstrate leadership qualities, business and project administration and entrepreneurial skills.

1/3/1 مصفوفة علاقة "أهداف البرنامج بمواصفات خريجي البرنامج"

PA 1	Act professionally in the engineering design and supervision of different civil engineering projects.
PA 2	Think analytically to solve complex problems that may show up during work and to be able to take quick decisions.
PA 3	Showing responsibility towards the local society and natural environment.
PA 4	Self-motivated and excellency seeker.

		Program Graduate's Attributes (GA)									
		GA1	GA2	GA3	GA4	GA5	GA6	GA7	GA8	GA9	GA10
Program Aims (PA)	PA 1										
	PA 2										
	PA 3										
	PA 4										

2/3/1 مصفوفة العلاقة "مواصفات الخريجين بجدارات البرنامج"

Program Competencies

Considering NARS 2018, the program competencies are classified into three categories: General competencies, Speciality Competencies, and Highly Specialised Competencies either Sub-Speciality or Inter-Disciplinary competencies.

For Utilities and Infrastructure Engineering Program, and in light of NARS 2018, the program competences are categorised into four categories:

- The "A" level: This category is planned to accommodate the speciality competencies that any engineering graduate should be characterised with,
- The "B" level: This category is planned to the Basic Civil Engineering speciality competencies that any civil engineering graduate should be characterised with.

A. General Competences

- 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, analyse 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.
- A7- Function efficiently as an individual and as a member of multi-disciplinary and multi-cultural 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.

B. The Basic Civil Engineering Competencies

- B1- Select appropriate and sustainable technologies for construction of buildings; using either numerical techniques or physical measurements and/or testing by applying a full range of civil engineering concepts and techniques of: Structural Analysis and Mechanics, Properties and Strength of Materials, Surveying, Soil Mechanics and Fluid Mechanics.
- B2- Achieve an optimum design of Reinforced Concrete and Steel Structures, Foundations and Earth Retaining Structures; and at least three of the following civil engineering topics: Transportation and Traffic, Roadways and Airports, Railways, Sanitary Works, Irrigation, Water Resources and Harbors; or any other emerging field relevant to the discipline.
- B3- Plan and manage construction processes; address construction defects, instability and quality issues; and maintain safety measures in construction and materials.
- B4- Deal with biddings, contracts and financial issues including project insurance and guarantees; and assess environmental impacts of civil engineering projects.

Table [4] The relationship matrix of "Graduate's Attributes Vs Program's Competences".

		Program Graduate's Attributes (GA)									
		GA1	GA2	GA3	GA4	GA5	GA6	GA7	GA8	GA9	GA10
Program's Competences (PC)	A1										
	A2										
	A3										
	A4										
	A5										
	A6										
	A7										

A8											
A9											
A10											
B1											
B2											
B3											
B4											

أ- (مثال على مصفوفة ربط مخرجات التعلم بالجداريات في المقرر) (مقرر Sanitary Eng. SAN425)

لائحة قديمة (2012)

Mapping				
LOs	Level of competences			
	A1	A3	B2	
LO1				
LO2				
LO3				
LO4				
LO5				
LO6				

ب- (مثال على مصفوفة ربط مخرجات التعلم بطرق التدريس في المقرر) (مقرر Water supply Eng. CVE313)
لائحة جديدة (2020)

Assessment	LOs					
	LO 1	LO 2	LO 3	LO 4	LO5	LO 6
Interactive Lecture						
Problem solving						
Tutorial						

2-مصفوفة اساليب التدريس المطبقة في برنامج الهندسة المدنية

1/2 طرق التدريس والتعلم المطبقة بالفعل في برنامج الهندسة المدنية لائحة 2012

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
MTH 111	Mathematics 1										
MTH 121	Mathematics 2										
STA 321	Statistics& Probability Theory										
PHY 112	Physics 1										
PHY 122	Physics 2										
MEC 113	Mechanics-1										
MEC 126	Mechanics-2										
CHE 123	Engineering Chemistry										
CSK 116	Computer Skills										
EVI 412	Environmental Impact of Projects										
DRW 114	Engineering Drawing & Projection-1										
DRW 124	Engineering Drawing & Projection-2										

HET 115	History of Engineering & Technology										
MAN 125	Principles of Manufacturing										
PRM 512	Project Management										
QCS 226	Monitoring & Quality Control Systems										
IEN 351	Engineering Economics										
TRW 215	Technical Report Writing										
FTR 329	Field Training 1										
FTR 429	Field Training 2										
CIV 211	Principles of Construction & Building Engineering										
ELP 213	Principles of Electrical Engineering										
MED 215	Principles of Design & Manufacturing Engineering										
MEP 216	Principles of Mechanical Power Engineering										

MTH 211	Mathematics 3										
MTH 311	Mathematics 4										
SDM 212	Mechanics of Solids										
STR 213	Structural Analysis 1										
STR 223	Structural Analysis 2										
STR 323	Structural Analysis 3										
DCS 313	Design of Concrete Structures 1										
DCS 413	Design of Concrete Structures 2										
DST 321	Design of Steel Structures 1										
DST 421	Design of Steel Structures 2										
BMT 227	Behavior of Materials										
CCT 314	Concrete Technology										
GEO 215	Geology										
SOM 322	Soil Mechanics										

FDE 412	Foundation Engineerin g 1										
CPM 511	Manage ment of Constructio n Projects										
CDR 214	Civil Drawing										
SRV 222	Engineerin g Surveying										
HYD 315	Hydraulics										
HDR 324	Hydrology										
BLD 215	Building Construction l										
IRR 421	Irrigation Network Engineeri ng										
ENV 414	Environ mental Engineeri ng										
HWY 423	Highway Engineeri ng										
DWB 417	Design of Wall Bearing										

	Structures										
RST 424	Repair & Strengthening of Structures										
FDE 512	Foundation Engineering 2										
DSR 513	Structural Dynamics										
DCS 514	Design of Concrete Structures 3										
DBR 515	Design of Bridges										
HRB 516	High Rise Buildings										
CNE 518	Construction Engineering										
DIS 418	Design of Irrigation Structures										
GIS 419	Maps, GIS & Remote Sensing										
SAN 425	Sanitary Engineering										
TRN 523	Transportation										

	Engineering										
HRB 524	Harbor Engineering										
PRJ 525	Bachelor Project - Structural Engineering										
PRJ 526	Bachelor Project - Public Works										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
BAS011	Mathematics (1)										
BAS012	Vibration and Waves										
BAS013	Statics										
BAS014	Engineering Chemistry										
BAS015	Engineering Drawing (1)										
CCE011	Computing in Engineering										
NUB	Complete hours from NUB Compulsory										
BAS021	Mathematics (2)										
BAS022	Electricity and Magnetism										
BAS023	Dynamics										
BAS024	Fundamentals of Engineering										
BAS025	Engineering Drawing (2)										
MPE021	Production Engineering										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
BAS111	Mathematics (3)										
BAS112	Building Safety and Fire Protection										
ARE116	Principle of Building Construction										
CVE111	Structural Analysis (1)										
CVE112	Engineering Surveying										
CVE113	Civil Drawing										
	Structure and properties of materials Elective										
BAS121	Mathematics (4)										
BAS122	Probability and Statistics										
CVE121	Structural Analysis (2)										
CVE122	Properties of Materials										
CVE123	Geology										
CVE124	Environmental										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
	Engineering										
CVE125	Fluid Mechanics										
CVE211	Design of Concrete Structures (1)										
CVE212	Structural Analysis (3)										
CVE213	Concrete Technology										
CVE214	Field Training (1)										
CVE215	Topographic and Photogrammetric Surveying										
CVE216	Soil Mechanics (1)										
	Project Management Elective										
CVE221	Design of Concrete Structures (2)										
CVE222	Design of Steel Structures (1)										
CVE223	Soil Mechanics (2)										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic LMS& learning LMS& teams	Tutorials	laboratory
CVE224	Irrigation and drainage Engineering										
CVE225	Hydraulics										
	Civil Elective (1)										
CVE311	Transportation and Traffic Engineering										
CVE312	Design of Steel Structures (2)										
CVE313	Water Supply Engineering										
CVE314	Design of Concrete Structures (3)										
CVE315	Foundations Engineering (1)										
CVE316	Field Training (2)										
	Civil Elective (2)										
NUB	Complete hours from NUB Compulsory										
CVE321	Design of Concrete Structures (4)										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
CVE322	Design of Bridges										
CVE323	Highway Engineering										
CVE324	Design of Irrigation Structures (1)										
CVE325	Wastewater Engineering										
	Civil Elective (3)										
CVE411	Foundations Engineering (2)										
CVE412	Repair & Strengthening of Structures										
CVE413	Quantities and Specifications										
CVE414	Management of Construction Projects										
CVE415	Construction Engineering										
	Civil Elective (4)										
	Civil Elective (5)										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic LMS& learning LMS& teams	Tutorials	laboratory
	Engineering Economy Elective										
CVE171	Railway Engineering										
CVE172	Maps, GIS & Remote Sensing										
CVE174	Hydrology										
CVE175	Solid wastes										
CVE176	Structural Dynamics and Seismic analysis										
CVE177	Design of Wall Bearing Structures										
CVE271	Plumbing Engineering										
CVE272	Design of High Rise Buildings										
CVE273	Quality Control in Construction Engineering										
CVE274	Geometric Geodesy and Geodetic Astronomy										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
CVE275	Irrigation and Drainage Systems										
CVE276	Prestressed Concrete										
CVE277	Advanced Materials										
CVE371	Graduation Project (1) and Computer Applications - Structural Engineering										
CVE372	Graduation Project (1) and Computer Applications - Public Works										
CVE373	Graduation Project (1) and Computer Applications - Water Resources										
CVE371	Graduation Project (1) and Computer Applications - Structural										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic LMS& learning LMS& teams	Tutorials	laboratory
	Engineering										
CVE372	Graduation Project (1) and Computer Applications - Public Works										
CVE373	Graduation Project (1) and Computer Applications - Water Resources										
Elective 4											
CVE470	Design of Irrigation Structures (2)										
CVE471	Quality and chemistry of water										
CVE472	Harbor Engineering										
CVE473	Design of Special reinforced concrete										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
	structures										
CVE474	Transportation Engineering and Planning										
CVE475	Tunnels and underground structures										
CVE476	Water Resources Management										
CVE477	Hydraulic Machines										
CVE478	Airport Engineering										
CVE479	Construction of Water and Wastewater Infrastructure										
CVE571	Graduation Project (2) – Structural Engineering										
CVE572	Graduation										

Code	Course Title	Inter active lectures	Problem solving	Project based lectures	In class discussion	Self-study research(research and report	Site visits	Interactive education strategies	Electronic learning LMS& teams	Tutorials	laboratory
	Project (2) – Public Works										
CVE573	Graduation Project (2) - water resources										

3- مصفوفات مقررات التعليم الذاتي ومصادرها
1/3 مقررات التعليم الذاتي ومصادرها في برنامج الهندسة المدنية لائحة 2012

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
MTH 111	Mathematics 1				Library and internet
MTH 121	Mathematics 2				Library and internet
STA 321	Statistics& Probability Theory				Library and internet
PHY 112	Physics 1				Library and internet
PHY 122	Physics 2				Library and internet
MEC 113	Mechanics-1				Library and internet
MEC 126	Mechanics-2				Library and internet
CHE 123	Engineering Chemistry				Library and internet
CSK 116	Computer Skills				Library and internet
EVI 412	Environmental Impact of Projects				Library and internet
DRW 114	Engineering Drawing & Projection-1				Library and internet
DRW 124	Engineering Drawing & Projection-2				Library and internet
HET 115	History of Engineering &Technology				Library and internet
MAN 125	Principles of Manufacturing				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
PRM 512	Project Management				Library and internet
QCS 226	Monitoring & Quality Control Systems				Library and internet
IEN 351	Engineering Economics				Library and internet
TRW 215	Technical Report Writing				Library and internet
FTR 329	Field Training 1				Library and internet
FTR 429	Field Training 2				Library and internet
CIV 211	Principles of Construction & Building Engineering				Library and internet
ARC 212	Arts & Architecture				Library and internet
ELP 213	Principles of Electrical Engineering				Library and internet
ELE 214	Principles of Electronic Engineering				Library and internet
MED 215	Principles of Design & Manufacturing Engineering				Library and internet
MEP 216	Principles of Mechanical Power Engineering				Library and internet
MTH 211	Mathematics 3				Library and internet
MTH 311	Mathematics 4				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
SDM 212	Mechanics of Solids				Library and internet
STR 213	Structural Analysis 1				Library and internet
STR 223	Structural Analysis 2				Library and internet
STR 323	Structural Analysis 3				Library and internet
DCS 313	Design of Concrete Structures 1				Library and internet
DCS 413	Design of Concrete Structures 2				Library and internet
DST 321	Design of Steel Structures 1				Library and internet
DST 421	Design of Steel Structures 2				Library and internet
BMT 227	Behavior of Materials				Library and internet
CCT 314	Concrete Technology				Library and internet
GEO 215	Geology				Library and internet
SOM 322	Soil Mechanics				Library and internet
FDE 412	Foundation Engineering 1				Library and internet
CPM 511	Management of Construction Projects				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
CDR 214	Civil Drawing				Library and internet
SRV 222	Engineering Surveying				Library and internet
HYD 315	Hydraulics				Library and internet
HDR 324	Hydrology				Library and internet
BLD 215	Building Construction 1				Library and internet
IRR 421	Irrigation Network Engineering				Library and internet
ENV 414	Environmental Engineering				Library and internet
HWY 423	Highway Engineering				Library and internet
DWB 417	Design of Wall Bearing Structures				Library and internet
RST 424	Repair & Strengthening of Structures				Library and internet
FDE 512	Foundation Engineering 2				Library and internet
DSR 513	Structural Dynamics				Library and internet
DCS 514	Design of Concrete Structures 3				Library and internet
DBR 515	Design of Bridges				Library and internet
HRB 516	High Rise Buildings				Library and

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
					internet
CNE 518	Construction Engineering				Library and internet
DIS 418	Design of Irrigation Structures				Library and internet
GIS 419	Maps, GIS & Remote Sensing				Library and internet
SAN 425	Sanitary Engineering				Library and internet
TRN 523	Transportation Engineering				Library and internet
HRB 524	Harbor Engineering				Library and internet
PRJ 525	Bachelor Project - Structural Engineering				Library and internet
PRJ 526	Bachelor Project - Public Works				Library and internet

2/3-مقررات التعليم الذاتى ومصادرها فى برنامج الهندسة المدنية لائحة 2020

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
BAS011	Mathematics (1)				Library and internet
BAS012	Vibration and Waves				Library and internet
BAS013	Statics				Library and internet
BAS014	Engineering Chemistry				Library and internet
BAS015	Engineering Drawing (1)				Library and internet
CCE011	Computing in Engineering				Library and internet
BAS021	Mathematics (2)				Library and internet
BAS022	Electricity and Magnetism				Library and internet
BAS023	Dynamics				Library and internet
BAS024	Fundamentals of Engineering				Library and internet
BAS025	Engineering Drawing (2)				Library and internet
MPE021	Production Engineering				Library and internet
BAS111	Mathematics (3)				Library and internet
BAS112	Building Safety and Fire Protection				Library and internet
ARE116	Principle of Building Construction				Library and internet
CVE111	Structural Analysis (1)				Library and internet
CVE112	Engineering Surveying				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
CVE113	Civil Drawing				Library and internet
BAS121	Mathematics (4)				Library and internet
BAS122	Probability and Statistics				Library and internet
CVE121	Structural Analysis (2)				Library and internet
CVE122	Properties of Materials				Library and internet
CVE123	Geology				Library and internet
CVE124	Environmental Engineering				Library and internet
CVE125	Fluid Mechanics				Library and internet
CVE211	Design of Concrete Structures (1)				Library and internet
CVE212	Structural Analysis (3)				Library and internet
CVE213	Concrete Technology				Library and internet
CVE214	Field Training (1)				Library and internet
CVE215	Topographic and Photogrammetric Surveying				Library and internet
CVE216	Soil Mechanics (1)				Library and internet
	Project Management Elective				Library and internet
CVE221	Design of Concrete Structures (2)				Library and internet
CVE222	Design of Steel Structures (1)				Library and internet
CVE223	Soil Mechanics (2)				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
CVE224	Irrigation and drainage Engineering				Library and internet
CVE225	Hydraulics				Library and internet
CVE311	Transportation and Traffic Engineering				Library and internet
CVE312	Design of Steel Structures (2)				Library and internet
CVE313	Water Supply Engineering				Library and internet
CVE314	Design of Concrete Structures (3)				Library and internet
CVE315	Foundations Engineering (1)				Library and internet
CVE316	Field Training (2)				Library and internet
CVE321	Design of Concrete Structures (4)				Library and internet
CVE322	Design of Bridges				Library and internet
CVE323	Highway Engineering				Library and internet
CVE324	Design of Irrigation Structures (1)				Library and internet
CVE325	Wastewater Engineering				Library and internet
CVE411	Foundations Engineering (2)				Library and internet
CVE412	Repair & Strengthening of Structures				Library and internet
CVE413	Quantities and Specifications				Library and internet
CVE414	Management of Construction Projects				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
CVE415	Construction Engineering				Library and internet
	Civil Elective (4)				Library and internet
	Civil Elective (5)				
CVE171	Railway Engineering				Library and internet
CVE172	Maps, GIS & Remote Sensing				Library and internet
CVE174	Hydrology				Library and internet
CVE175	Solid wastes				Library and internet
CVE176	Structural Dynamics and Seismic analysis				Library and internet
CVE177	Design of Wall Bearing Structures				Library and internet
CVE271	Plumbing Engineering				Library and internet
CVE272	Design of High Rise Buildings				Library and internet
CVE273	Quality Control in Construction Engineering				Library and internet
CVE274	Geometric Geodesy and Geodetic Astronomy				Library and internet
CVE275	Irrigation and Drainage Systems				Library and internet
CVE276	Prestressed Concrete				Library and internet
CVE277	Advanced Materials				Library and internet
CVE371	Graduation Project (1) and Computer Applications - Structural Engineering				Library and internet
CVE372	Graduation Project (1) and Computer Applications - Public Works				Library and internet
CVE373	Graduation Project (1) and Computer Applications				Library and internet

Code	Course Title	In class discussion	Self-study research(research and report	Electronic learning LMS& teams	Sources
	- Water Resources				
Elective 4					Library and internet
CVE470	Design of Irrigation Structures (2)				Library and internet
CVE471	Quality and chemistry of water				Library and internet
CVE472	Harbor Engineering				Library and internet
CVE473	Design of Special reinforced concrete structures				Library and internet
CVE474	Transportation Engineering and Planning				Library and internet
CVE475	Tunnels and underground structures				Library and internet
CVE476	Water Resources Management				Library and internet
CVE477	Hydraulic Machines				Library and internet
CVE478	Airport Engineering				Library and internet
CVE479	Construction of Water and Wastewater Infrastructure				Library and internet
CVE571	Graduation Project (2) – Structural Engineering				Library and internet
CVE572	Graduation Project (2) – Public Works				Library and internet
CVE573	Graduation Project (2) - water resources				Library and internet