نموذج وصف المقرر

1. اسم المقرر :	
التخمين والمواصفات الهندسية	
2. رمز المقرر :	
3. الفصل / السنة :	
سنوي 2024/2023	
4. تاريخ إعداد هذا الوصف :	
2024/4/30	
5. أشكال الحضور المتاحة	
اسبوعي نظري + عملي	
6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي) :	
عدد الساعات الدراسية (الكلي)/ 120 ساعة)/ عدد الوحدات (الكلي) :30	
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر) :	
الاسم : أ.م.د.نزار حسن محمد	الايميل:
8. اهداف المقرر	
اهداف المادة الدراسية	سيتمكن الطالب من عمل حسابات تقريبية ومفصلة للمباني ، وتحديد طريقة القياس المناسبة ، وإجراء تحليل لعناص الأعمال المختلفة. كما سيكون قادرًا على كتابة المواصفات الفنية لمختلف أعمال الهندسة المدنية. أخيرًا ، سيتعرف على أنواع العقود والشروط العامة والخاصة المتعلقة بها
9. استراتيجيات التعليم والتعلم	
الاستراتيجية	1. مخرجات المقرر وطرائق التعليم والتعلم والتقييم أ- الأهداف المعرفية سيكون الطالب قادراً على عمل تقديرات تقريبية وتفصيلية للمباني، وتحديد الطريقة الصحيحة للقيا وإجراء تحليل المعدل لبنود الأعمال المختلفة. كما سيكون قادراً على كتابة المواصفات الفنية لأع الهندسة المدنية المختلفة. وأخيراً سيحصل على معرفة وافية بأنواع العقود والشروط العامة والخا المتعلقة بها. طرائق التعليم والتعلم • طريقة حضور المحاضرة و الامتحانات النظرية • الواجبات العملية داخل المختبرات • طريقة تشخيص المشكلة و ايجاد حل لها طرائق التقييم 1. الامتحانات اليومية و الشهرية و النهائية 2. تنفيذ الواجبات العملية داخل المختبرات

3. المشاركة الفاعلة في المحاضرات
ج- الأهداف الوجدانية والقيمية
ج1- زرع روح الابداع لدى الطلبة والحرص على ايجادهم حلول مبتكرة للمشكلات المختلفة
ج2- تنمية قابلية الطلبة على العمل الجماعي كفرق فعالة تخرج بنتائج مميزة
ج3- تنمية الشعور بالمسؤولية لدى الطلبة و التهيئة النفسية لتحمل الاعباء الملقاة على عاتقهم
ج4- تنمية قيم الحرص على انجاز العمل للوصول الى نتائج مرضية
طرائق التعليم والتعلم
1. المناقشة
2. المحاضرات
طرائق التقييم
(الملاحظة , المقابلة و الواجبات الصفية و البيئية)
د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).
د1- قدرة الطالب على القاء و تنظير فكرته الى مجموعة من الطلبة
د2- صياغة المشاكل المطروحة الى مشاريع عملية
د3- القدرة على اكتساب المعرفة المتأتية من الخبرة العلمية

4. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	2عملي + 2نظري	فهم الطالب للموضوع	Introduction: engineering projects &estimation, definition of estimation, bene of estimation, factors affecting cost estimation, types of estimation, practica examples on approximate estimation.	محاضرات صفية + تجارب عملية	الامتحانات اليومية + الواجبات البيتية
2	=	=	=	=	=
3	=	=	General rules in quantitative survey: Principles in selecting units of measureme for items, various units and modes of measurement for different items of work details of quantities measuring.	=	=
4	=	=	Factors affecting the cost of materials an labour, Plants and equipment -hour cost based on total costs and Outputs, Overhe charges, rates for various items of construc of civil engineering works, problems an examples on rate analysis	=	=
5	=	=	Methods of working quantities for variou items of works, Measurement and abstra sheets and recording, excavation and fil works for wall footings, estimation of wa and other items of buildings up to D. P. level, methods used to calculate the length various works: method of strips and cent lines method, examples and problems.	=	=
6	=	=	Earthworks for various engineering projec	=	=

		irrigation channels, roadway embankmen methods used for calculating earthwork quantities and volumes, Mass diagrams calculations of excavation volumes due to works (grid leveling method and triangul method), examples and problems.			
=	=	=	=	=	7
=	=	=	=	=	8
=	=	Estimation of masonry works, basic units a materials used, Estimation of walls construction, damp proofing used, brick works, block works, stone works, exampl and problems	=	=	9
=	=	types of concrete mixers, calculating quantities of concrete materials, examples problems	=	=	10
=	=	=	=	=	11
=	=	=	=	=	12
=	=	=	=	=	13
=	=	Estimation of concrete works quantities f lintels, beams, roofs, columns and stairs	=	=	14
=	=	=	=	=	
=	=	Estimation of form works quantities for lintels, beams, roofs, tie beams, columns a arches	=	=	15
=	=	Reinforcement calculations for beams, roo columns and footings, specifications	=	=	16
=	=	Finishing works: types, estimation of outs and inside finishing works, plastering,	=	=	18
=	=	Painting, brick and stone coating, glass wo specifications	=	=	19
=	=	Estimation of tiles works: tiles, mosaic, ceramic, porcelain, … etc, specification	=	=	20
=	=	Estimation of sanitary, sewage, plumbing and electrical works Estimation of materials used in flexible and rigid pavements, estimation of curbstones used in curbs Estimation of materials used in industria sheds and steel buildings, columns and ba plates, beams and bearing plates, connecti floors and roofs.	=	=	21
=	=	Machines and equipment used in executi various works, Cost of owning and operat construction machines; depreciation, investment and operational costs. Profits payment and indirect project costs	=	=	22
=	=	=	=	=	23

24	=	=	=	=	=
25	=	=	Computer-aided estimation, Using spread sheet applications and other software packages in estimation Valuation: Principles, purpose and functio valuation, Factors affecting the valuation properties, Valuer and his duties.	=	=
26	=	=	=	=	=
27	=	=	=	=	=
28	=	=	=	=	=
29	=	=	Contracts: definition, types of contracts Identification of rules, standards, related to contracts of civil engineering works and related items, general and special conditio for civil engineering works	=	=
30	=	=	=	=	=

5. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير .... الخ

6. مصادر التعلم والتدريس

الكتب المقررة المطلوبة (المنهجية أن وجدت	1. **تخمين ومواصفات الأعمال الإنشائية، المهندس غانم عبد الرحمن بكر.** 2. التخمين والمواصفات، مدحت فضيل فتح الله. 3. ط المقاولات لأعمال الهندسة المدنية بقسميها الأول والثاني، وزارة التخطيط والتعاون الإنمائي، 2005 4. واصفات الفنية العامة، المكتب الاستشاري في معهد التكنولوجيا/بغداد، طبعة أولى، 1982.
المراجع الرئيسة (المصادر)	1. Construction, Planning & Technology, Rajiv Gupta, 198 2. Construction, Planning Equipment & Methods, R.L. Peurifoy et al, 7th ed., 2006. 3. General technical conditions and specifications, book -1 2, specification of materials workmanship of civil engineering works, 2nd ed., 2002. 4. Building construction handbook, R. Chudley and R. Greeno, 5th ed., Elsevier Butterworth-Heinemann, 200 5. Practical Standard Methods of Measurement Cost Estimating in the Design Stage, Hong-Kong, 2001,. 6. The civil engineering handbook / edited by W.F. Chen and J.Y. Richard Liew, 2nd ed., by CRC press LLC, Ch. 1, Construction, 2003.
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	1. V.N,Vanziranal,S.P.Chandola "Civil Engineering Estimati and Costing

Course Description Form

1. Course Name:
Estimation and engineering specifications
2. Course Code:
MU0234004
3. Semester / Year:
Annual /2024−2023
4. Description Preparation Date:
2024/4/30
5. Available Attendance Forms:
Class lectures+Practical experiences
6. Number of Credit Hours (Total) /Number of Units (Total)
Number of Credit Hours (Total) /120 Number of Units (Total)/30
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Nezar Hassan Mohamed Email:
8. Course Objectives

Course Objectives The	student will be able to make approximate and detailed calculations of buildings, determine the appropriate measurement method, and carry out analysis o various elements of works. He will also be able to write technical specifications for various civil engineering works. Finally, he will learn about the types of contracts and the general and special conditions related to them

9. Teaching and Learning Strategies

Strategy	1. Course outcomes and teaching, learning and evaluation methods A- Cognitive objectives A1- Providing the student with a knowledge skill about the basics of the AutoCAD program A2- The student knows the reinforcement of reinforced concrete members suc as foundations, bridge columns, and roofs of all kinds. A3- The student knows how to draw the constituent members of various iron

	buildings and trusses A4-The student knows how to draw longitudinal and cross sections B - The skills objectives of the course. Teaching and learning methods •How to attend lectures and theoretical exams •Practical duties within laboratories •How to diagnose the problem and find a solution to it Evaluation methods 1. Daily, monthly and final exams 2. Carrying out practical duties within laboratories 3. Active participation in lectures C- Emotional and value goals C1- Cultivating the spirit of creativity among students and ensuring that they find innovative solutions to various problems C2- Developing students' ability to work collectively as effective teams that produce distinctive results C3- Developing a sense of responsibility among students and psychological preparation to bear the burdens placed on their shoulders C4- Developing the values of ensuring work is completed to achieve satisfactor results Teaching and learning methods 1. Discussion 2. Lectures Evaluation methods Observation, interview, classroom and environmental assignments)D - Genera and qualifying transferable skills (other skills related to employability and personal development(D1- The student's ability to present and theorize his idea to a group of student D2- Formulating the problems raised into practical projects D3- The ability to acquire knowledge derived from scientific experience
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Student understanding	Introduction: engineering projects &estimation, definition of estimation, benefits of estimation, factors affecting cost estimation, types of estimation, practical examples on approximate estimation.	2 hrs (Theoretical), 2 hrs (Practical)	Class lectures + Practical experiences
2	=	=	=	=	=
3	=	=	General rules in quantitative survey: Principles in selecting units of measurement for items, various units and modes of measurement for different items of works, details of quantities measuring.	=	=
4	=	=	Factors affecting the cost of materials and labour, Plants and equipment -hour costs based on total costs and Outputs, Overhead charges, rates for various items of construction of civil engineering works, problems and examples on rate analysis	=	=
5	=	=	Methods of working quantities for various items of works, Measurement and abstract sheets and recording, excavation and fill works for wall footings, estimation of walls and other items of buildings up to D. P. C. level, methods used to calculate the length of various works: method of strips and center lines method, examples and problems.	=	=
6	=	=	Earthworks for various engineering projects: irrigation channels, roadway embankments, methods used for calculating earthwork quantities and volumes, Mass diagrams, calculations of excavation volumes due to cut works (grid leveling method and triangular method), examples and problems.	=	=
7	=	=	=	=	=
8	=	=	=	=	=
9	=	=	Estimation of masonry works, basic units and materials used, Estimation of walls construction, damp proofing used, brick works, block works, stone works, examples and problems	=	=
10	=	=	types of concrete mixers, calculating quantities of concrete materials, examples and problems	=	=
11	=	=	=	=	=
12	=	=	=	=	=

13	**=**	**=**	=	**=**	**=**
14	**=**	**=**	Estimation of concrete works quantities for lintels, beams, roofs, columns and stairs	**=**	**=**
15	**=**	**=**	=	**=**	**=**
16	**=**	**=**	Estimation of form works quantities for lintels, beams, roofs, tie beams, columns and arches	**=**	**=**
17	**=**	**=**	Reinforcement calculations for beams, roofs, columns and footings, specifications	**=**	**=**
18	**=**	**=**	Finishing works: types, estimation of outside and inside finishing works, plastering,	**=**	**=**
19	**=**	**=**	Painting, brick and stone coating, glass works, specifications	**=**	**=**
20	**=**	**=**	Estimation of tiles works: tiles, mosaic, ceramic, porcelain, … etc, specifications	**=**	**=**
21	**=**	**=**	Estimation of sanitary, sewage, plumbing and electrical works Estimation of materials used in flexible and rigid pavements, estimation of curbstones used in curbs Estimation of materials used in industrial sheds and steel buildings, columns and base plates, beams and bearing plates, connections, floors and roofs.	**=**	**=**
22	**=**	**=**	Machines and equipment used in executing various works, Cost of owning and operating construction machines; depreciation, investment and operational costs. Profits, payment and indirect project costs	**=**	**=**
23	**=**	**=**	=	**=**	**=**
24	**=**	**=**	=	**=**	**=**
25	**=**	**=**	Computer-aided estimation, Using spread sheet applications and other software packages in estimation Valuation: Principles, purpose and function of valuation, Factors affecting the valuation of properties, Valuer and his duties.	**=**	**=**
26	**=**	**=**	=	**=**	**=**
27	**=**	**=**	=	**=**	**=**

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources	
equired textbooks (curricular books, if any)	1. Estimation and specifications of construction 2. works, Engineer Ghanem Abdel Rahman Bakr. 3. Estimation and specifications, Medhat Fodil Fathallah. 4. Contracting conditions for civil engineering works, sections one and two, Ministry of Planning and Development Cooperation, 2005 5. General technical specifications, consulting office at the Institute of Technology/Baghdad, first edition, 1982.
Main references (sources)	All books on construction drawing
Recommended books and references (scientific journals, reports…)	1. – Construction, Planning & Technology, Rajiv Gupta, 1984. 2. Construction, Planning Equipment & Methods, R.L. Peurifoy et al, 7th ed., 2006. 3. General technical conditions and specifications, book 1 / 2, specification of materials workmanship of civil engineering works, 2nd ed., 2002. 4. Building construction handbook, R. Chudley and R. Greeno, 5th ed., Elsevier Butterworth-Heinemann, 2004. 5. Practical Standard Methods of Measurement Cost Estimating in the Design Stage, Hong-Kong, 2001,. 6. The civil engineering handbook / edited by W.F. Che and J.Y. Richard Liew, 2nd ed., by CRC press LLC, Ch. Construction, 2003. 1.
Electronic References, Websites	Virtual Kingdom, Google, Facebook, You T