Course Description
Programming

This description provides a brief summary of the most important characteristics of the course and the expected learning outcomes, indicating the maximum benefit from the provided learning methods. Those methods must be linked to the program description.

1. Educational Institution	**University of Warith Al-Anbiyaa**
2. Department / Center	**Civil engineering**
3. Course Name/ Level	**Programming**
4. Lecturer name:	**Asst. Lect. Saja Ali**
5. Teaching Methods	**Theoretical and Practical Classes**
6. Year/semester	**2023-2024(semster System)**
7. Number of teaching hours	**60 hrs. (theoretical) + 60 hrs. (practical)**
8. The date the description preparation	**14/2/2024**

9. Course objectives is to help students to:
   a) Preparing the student to learn programming languages and how to apply them
   b) Providing the student with programming skills and how to use practical programs to solve engineering and mathematical equations
   c) Benefiting from the development of technology and engineering programs to unleash engineering creativity.

Course outcomes and teaching, learning and evaluation methods .

A- Cognitive objectives

1.Self-learning method
2.The student's ability to learn programming languages
3.Using programming languages in scientific subjects
4.Urging students to rely on themselves in solving various mathematical problems using calculators and engineering programs

Teaching and learning methods

1.Giving lectures and using methodological books .
2.Practical applications in solving engineering problems .
3.Asking the students a set of questions to help them draw conclusions .
4.Encouraging students to discuss and conclude in solving mathematical problems using 4 calculators and engineering programs
5.Homework

Evaluation methods

1.Conducting daily and monthly examinations .
2.Evaluating students' contributions within the lecture
3.Application in practical lectures .
4.Final exams .

C- Emotional and value goals

1.Support and express viewpoints and constructive discussion .
2.Encouraging students to participate and be self-confident
3.Enabling the student to apply the information he was provided theoretically and applied in the . laboratory in the field his specialty

Teaching and learning methods

1.Form discussion groups during the lecture .
2.Asking the students a set of questions to help them draw conclusions .

Evaluation methods

1.Daily and monthly exams
2.Participate in solving problems as group .
3.Individual contributions .

D - Transferable general and qualifying skills (other skills related to employability and .personal development)

1.Developing the student's ability to use programming languages in the field of specialization
2.Developing the student's ability to deal with modern technologies
3.Developing the student's ability to confront problems and dilemmas and find solutions to them

Course Structure					
Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	Week
Short exams. 2. Semester exams 3. Extracurricular assignments 4. Practical applications.	Theoretical lectures + practical applications	Introduction to fortran Types of varieables and constants Input statement Output statement Format statements Arithimetic and logic operators Data statement Flow chart	Learn about programming language scheduled for the current academic year Learn the most important variables and constants used in the Fortran language Teaching the student how to enter data and instructions used to do so Learn how to arrange the input and output format on Screen using format Identify the most important mathematical operations and how to perform them Calculations in Fortran language Learn about the Data statement and how to use it Teaching the student how to make a graph for the program To help understand how the program works	36	1-9

	Theoretical lectures + practical applications	Control statement Else if - statement Neasted if - statement Case statement - Go to - statement	To learn about the types of control and conditional statements Used in Fortran language How to use the if - statement and its types Use if when there - is more than one case and more than condition Learn how to use - nested if	24	15-10
	Theoretical lectures + practical applications	Counting DOLoop General - DOLoop with EXIT Nested - DOLoops DO-CYCLE -	Learn about iterative loops, their types, and how Use it How to use the - Exit statement in loops And the benefit from it Teaching the - student nested iterative loops Using loops with - the cycle statement	36	16-24

	Theoretical lectures + practical applications	Arrays Array - Input//Output DATA - statement Arrays - Multiplication Array - generation	Identify matrices, their types and dimensions Teaching the - student how to enter and extract data in the array Using the Data - statement in arrays How to calculate - array multiplication in a program FORTRAN Teaching the - student how to create array	24	30-25

Fortran 90 Handbook	1- Required prescribed books
An introduction to programming in fortan 90	2- Main references (sources)
Publicly published research journals	A) Recommended books and references (scientific journals, reports, etc.)
electronic journals,	B) Electronic references, ...، Internet sites

Course development plan
Developing courses according to what suits the labor market and developing the use of scientific programs and modern languages as appropriate