



# TEMPLATE FOR COURSE SPECIFICATION

## HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

### COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	AL-Ayen University
2. University Department/Centre Department	College of Engineering/Petroleum
3. Course title/code	Integrated Reservoir Management
4. Modes of Attendance offered Tutorial	Online Education/On campus
5. Semester/Year	Fall-2022 to Spring-2023
6. Number of hours tuition (total)	30 hrs
7. Date of production/revision of this specification 3/11/2021	
8. Aims of the Course	
	A-Formation evaluation. Developing and refining the geological model of the field.
	B-Well log analysis and interpretation. Core analysis. Well correlation.
	C-Mapping of reservoir rock properties.
	D- Estimation of oil and gas reserves. Reserves audits by Russian and Western standards.

E-Geologic evaluation and recommendations for development targets.  
F-Geological data preparation for the purposes of field development planning.

## 9. Learning Outcomes, Teaching , Learning and Assessment Methode

### A- Cognitive goals .

A1-Simulation studies to evaluate the efficiency of different scenarios for field development including development plans utilizing horizontal drilling.

A2-Two and three dimensional models of heterogeneous reservoirs.

A3-Optimization studies for reservoir development and enhanced oil recovery methods.

A4 -Feasibility studies, technological schemes and field development plans. Submission of design documentation for approval by State authorities.

A5-Engineering monitoring of field development.

A6-Reservoir engineering analysis of producing fields. Analysis of implemented reservoir management practices and recommendations for field performance improvement.

A7-Simulation studies for reserves estimation.

A8-Evaluation of the feasibility of horizontal drilling and infill drilling.

A9-Individual well or group of wells performance analysis – reservoir engineering perspective.

A10-Evaluation of oil production prospects in various regions.

B. The skills goals special to the course.

B1. Simulation

B2- Reservoir Management

B3-Economic Evaluation

Teaching and Learning Method

## Assessment methods

- Formation evaluation. Developing and refining the geological model of the field.
- Well log analysis and interpretation. Core analysis. Well correlation. Mapping of reservoir rock properties.
- Estimation of oil and gas reserves. Reserves audits by Russian and Western standards.
- Geologic evaluation and recommendations for development targets. Geological data preparation for the purposes of field development planning.

## C. Affective and value goals

C1.Academic honesty

C2-Logic

C3-Critical Thinking

## Teaching and Learning Methods

- Simulation
- Field data
- Government reports

## Assessment methods

1-Weekly Reports

2-Quizes

3- Exams

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

- D1. Strong English Language
- D2. Professional Investigation
- D3. Team Work
- D4. Software skills

### 10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1-4	5	Structural modeling	1-4	Software simulation	Weekly reports and quizzes
5-7	3	Porosity modeling	5-7	Field data	Weekly reports and quizzes
8-10	2	Saturation modeling	8-10	Experimental data	Weekly reports and quizzes
10-15	5	OIP Modeling	10-15	Simulation	Weekly reports and quizzes
15-20	5	Permeability	15-20	Governmental reports	Weekly reports and quizzes
20-25	5	Production data	20-25	Field data	Weekly reports and quizzes
25-30	5	History matching	25-30	Simulation	Weekly reports and quizzes

### 11. Infrastructure

1. Books Required reading:	SPE Forum Series V. Advances in Reservoir Management and Field Applications, Mt. Crested Butte, CO, August 13-18, 1989.
2. Main references (sources)	SPE Electronic papers: <a href="http://www.onepetro.org">www.onepetro.org</a>
A- Recommended books and references (scientific journals, reports...).	SPE Electronic papers: <a href="http://www.onepetro.org">www.onepetro.org</a>
	<a href="http://www.onepetro.org">www.onepetro.org</a>

B-Electronic references, Internet: [www.onepretro.org](http://www.onepretro.org)  
sites...

## 12. The development of the curriculum plan

The modern reservoir management process involves establishing a purpose or strategy and developing a plan, implementing and monitoring the plan, and evaluating the results. Integration of all these are essential for successful reservoir management. It is dynamic and ongoing. While a comprehensive plan for reservoir management is highly desirable, every reservoir may not warrant such a detailed plan because of cost effectiveness. The key to success is to have a management plan (whether so comprehensive or not) and implement it from day one.

