Ministry of Higher Education and Scientific Research Scientific supervision and evaluation device Department of Quality Assurance and Academic Accreditation

# Academic Program Description 2020-2021

University: Mosul College/Institute: College of Petroleum & Mining Engineering Scientific Department: Petroleum Reservoir Date of filling out the file: 1/8/2022 signature: Name of Department Head: Dr.Yasser H.Kddo Name of the scientific assistant: Dr.Mohammed Ali Alrashedi

Check the file before Division of Quality Assurance and University Performance Name of the Director of the Division of Quality Assurance and University Performance: **Asmaa Mowaffak Hamed AlHasany** 

Authentication of the Dean Assistant Prof. Maan Hassan Al-majed

#### University of Mosul College of Petroleum and Mining Engineering Dept. of Petroleum Reservoir Engineering



### Academic Program Details (Curriculum)

### First Stage

|     |          |  |          |       |      | Firs    | st Semester                   |         |   |
|-----|----------|--|----------|-------|------|---------|-------------------------------|---------|---|
| S   | Second   |  |          | First |      |         |                               |         |   |
| Sei | Semester |  | Semester |       |      | Credits | Subject Name                  | Code    | ت |
|     |          |  | D.       | Pr.   | Th.  |         |                               |         |   |
|     |          |  |          | 3     | 2    | 3.5     | Geology for engineers I       | PRE 111 | 1 |
|     |          |  |          |       | 2    | 2       | Engineering mechanics I       | PRE 112 | 2 |
|     |          |  |          |       | 3    | 3       | Mathematics I                 | PRE 113 | 3 |
|     |          |  |          |       | 2    | 2       | English I (Reading & Writing) | PRE 114 | 4 |
|     |          |  |          | 2     | 2    | 3       | Chemistry of Oil & Gas        | PRE 115 | 5 |
|     |          |  |          | 4     | 1    | 3       | Engineering Drawing           | PRE 116 | 6 |
|     |          |  |          | 2     | 2    | 3       | Electrical Technology         | PRE 117 | 7 |
|     |          |  |          |       | 1    | 1       | Chemical Safety               | PRE 125 | 8 |
|     |          |  | 11 15    |       | 21.5 | Sum.    | Course                        |         |   |
|     |          |  |          | 26    |      | 21.3    | Sum.                          |         |   |

### First Stage

|                    |     |                   |  |  |             | Se           | cond Semester                        |         |   |
|--------------------|-----|-------------------|--|--|-------------|--------------|--------------------------------------|---------|---|
| Second<br>Semester |     | First<br>Semester |  |  | Cred<br>its | Subject Name | Code                                 | ت       |   |
| D.                 | Pr. | Th.               |  |  |             |              |                                      |         |   |
|                    | 3   | 2                 |  |  |             | 3.5          | Geology for engineers II             | PRE 118 | 1 |
|                    |     | 2                 |  |  |             | 2            | Engineering mechanics II             | PRE 119 | 2 |
|                    |     | 3                 |  |  |             | 3            | Mathematics II                       | PRE 120 | 3 |
|                    |     | 2                 |  |  |             | 2            | English.II(Listening& Speaking)      | PRE 121 | 4 |
|                    |     | 2                 |  |  |             | 2            | Human Rights & Democracy             | PRE 122 | 5 |
|                    |     | 3                 |  |  |             | 3            | Principals of Petroleum Engineering  | PRE 123 | 6 |
|                    | 2   | 1                 |  |  |             | 3            | Engineering drawing using<br>AUTOCAD | PRE 124 | 7 |
|                    |     | 1                 |  |  |             | 1            | Chemical Security                    | PRE 126 | 8 |
|                    | 8   | 16                |  |  |             | 21.5         | Sum.                                 |         |   |
|                    | 24  |                   |  |  |             | 21.3         | Sum.                                 |         |   |

### Second Stage

|    |          |    |          |     | Firs | t Semester                                       |         |   |
|----|----------|----|----------|-----|------|--|---------|---|
| S  | Second   |    | First    |     |      |  |         |   |
| Se | Semester |    | Semester |     |      | Subject Name                                     | Code    | ت |
|    |          | D. | Pr.      | Th. |      |  |         |   |
|    |          |    | 3        | 2   | 3.5  | Gravity&magnetic Prospecting                     | PRE 212 | 1 |
|    |          |    | 3        | 2   | 3.5  | Petroleum Geology                                | PRE 213 | 2 |
|    |          |    |          | 3   | 3    | Fundamentals of Petroleum<br>Reservoir. Eng. I   | PRE 214 | 3 |
|    |          |    | 4        | 2   | 4    | Computer Applications in<br>Engineering (MATLAB) | PRE 215 | 4 |
|    |          |    |          | 2   | 2    | Numerical Analysis                               | PRE 216 | 5 |
|    |          |    |          | 3   | 3    | Engineering Statics                              | PRE 217 | 6 |
|    |          |    | 10<br>24 | 14  | 19   | Sum.   | •       |   |

### Second Stage

| Second Semester |                   |     |         |              |      |    |                           |          |   |  |  |  |  |
|-----------------|-------------------|-----|---------|--------------|------|----|---------------------------|----------|---|--|--|--|--|
| Se              | Second First      |     |         |              |      |    |                           |          |   |  |  |  |  |
| Sen             | Semester Semester |     | Credits | Subject Name | Code | ت  |                           |          |   |  |  |  |  |
| D.              | Pr.               | Th. |         |              |      |    |                           |          |   |  |  |  |  |
|                 | 2                 | 2   |         |              |      | 3  | Fluid mechanics           | PEE211   | 1 |  |  |  |  |
|                 | 2                 | 2   |         |              |      | 3  | Serving Engineering       | PRE 218  | 2 |  |  |  |  |
|                 |                   | 3   |         |              |      | 3  | Fundamentals of Petroleum | PRE 221  | 3 |  |  |  |  |
|                 |                   |     |         |              |      |    | Reservoir. Eng. II        | 1 KE 221 | 3 |  |  |  |  |
|                 |                   | 3   |         |              |      | 3  | Thermodynamics            | PRE 222  | 4 |  |  |  |  |
|                 | 2                 | 2   |         |              |      | 3  | Engineering Analysis      | PRE 223  | 5 |  |  |  |  |
|                 |                   | 3   |         |              |      | 3  | Strength of Materials     | PRE 224  | 6 |  |  |  |  |
|                 | 6                 | 15  |         |              |      | 18 | Sum.                      |          | • |  |  |  |  |
|                 | 21                |     | 10      | Sulli.       | Sum. |    |                           |          |   |  |  |  |  |

### Third Stage

|     |          |    |          |     | First | Semester                                     |         |   |
|-----|----------|----|----------|-----|-------|--|---------|---|
| S   | Second   |    | First    |     |       |  |         |   |
| Sei | Semester |    | Semester |     |       | Subject Name                                 | Code    | ت |
|     |          | D. | Pr.      | Th. |       |  |         |   |
|     |          |    | 3        | 2   | 3.5   | Seismic Reflection 2,3,4D                    | PRE 311 | 1 |
|     |          |    |          |     |       | (Processing & interpretation)                | FKE 511 | 1 |
|     |          |    | 3        | 2   | 3.5   | Well logging                                 | PRE 312 | 2 |
|     |          |    |          | 3   | 3     | Drilling Engineering I                       | PRE 313 | 3 |
|     |          |    | 3        | 2   | 3.5   | Rock Mechanics                               | PRE 314 | 4 |
|     |          |    |          | 3   | 3     | Production Engineering I                     | PRE 315 | 5 |
|     |          |    | 3        | 2   | 3.5   | Applied petroleum reservoir<br>engineering I | PRE 316 | 6 |
|     |          |    | 12       | 14  | 20    | Sum.   |         |   |
|     |          |    | 26       | •   | 20    | Sum.   |         |   |

## Third Stage

|        |          |       |          |  |  | Second  | l Semester                                    |         |   |
|--------|----------|-------|----------|--|--|---------|---|---------|---|
| Second |          | First |          |  |  |         |   |         |   |
| Ser    | Semester |       | Semester |  |  | Credits | Subject Name                                  | Code    | ت |
| D.     | Pr.      | Th.   |          |  |  |         |   |         |   |
|        |          | 3     |          |  |  | 3       | Drilling Engineering II                       | PRE 317 | 1 |
|        | 3        | 2     |          |  |  | 3.5     | Applied petroleum reservoir<br>engineering II | PRE 318 | 2 |
|        |          | 3     |          |  |  | 3       | Production Engineering II                     | PRE 319 | 3 |
|        |          | 3     |          |  |  | 3       | Natural gas technology                        | PRE 320 | 4 |
|        | 3        | 2     |          |  |  | 3.5     | Seismic interpretation                        | PRE 321 | 5 |
|        | 2        | 2     |          |  |  | 3       | Formation evaluation                          | PRE 322 | 6 |
|        | 8        | 15    |          |  |  | 19      | Sum.  |         |   |
|        | 23       |       |          |  |  | 17      | Sum.  |         |   |

|                    |           |                   |    |          |         | First        | Semester                                 |         |   |
|--------------------|-----------|-------------------|----|----------|---------|--------------|--|---------|---|
| Second<br>Semester |           | First<br>Semester |    |          | Credits | Subject Name | Code                                     | ۍ،      |   |
|                    | Schlester |                   | D. | Pr.      | Th.     | Cicuits      | Subject Name                             | Cout    |   |
|                    |           |                   |    |          | 3       | 3            | Enhanced oil recovery I                  | PRE 411 | 1 |
|                    |           |                   |    | 3        | 2       | 3.5          | reservoir characterization               | PRE 412 | 2 |
|                    |           |                   |    | 3        | 2       | 3.5          | petroleum system modeling                | PRE 419 | 3 |
|                    |           |                   |    | 3        | 2       | 3.5          | Advanced petroleum reservoir engineering | PRE 414 | 4 |
|                    |           |                   |    | 2        | 2       | 3            | Core Analysis                            | PRE 415 | 5 |
|                    |           |                   |    | 3        | 1       | 5            | Engineering Project                      |         | 6 |
|                    |           |                   |    | 11<br>23 | 12      | 21.5         | Sum.                                     |         |   |

### Fourth Stage

|        | Second Semester |       |    |       |         |         |                          |          |          |  |  |  |  |  |
|--------|-----------------|-------|----|-------|---------|---------|--------------------------|----------|----------|--|--|--|--|--|
| Second |                 | First |    |       | Cradita |         |                          |          |          |  |  |  |  |  |
| Ser    | neste           | r     | Se | emest | er      | Credits | Subject Name             | Code     | <u>ت</u> |  |  |  |  |  |
| D.     | Pr.             | Th.   |    |       |         |         |                          |          |          |  |  |  |  |  |
|        |                 | 3     |    |       |         | 3       | Enhanced oil recovery II | PRE 417  | 1        |  |  |  |  |  |
|        | 2               | 2     |    |       |         | 3       | Reservoir Simulation     | PRE 418  | 2        |  |  |  |  |  |
|        |                 | 2     |    |       |         | 2       | Petroleum Economic       | PRE 413  | 3        |  |  |  |  |  |
|        | 3               | 2     |    |       |         | 3.5     | Well testing             | PRE 420  | 4        |  |  |  |  |  |
|        | 2               | 2     |    |       |         | 3       | Petroleum reservoir      | PRE 421  | 5        |  |  |  |  |  |
|        |                 |       |    |       |         |         | management               | 1 KL 421 | 3        |  |  |  |  |  |
|        | 7               | 11    |    |       |         | 14.5    | Sum.                     |          |          |  |  |  |  |  |
| 18     |                 |       |    |       | 14.5    | Sum.    |                          |          |          |  |  |  |  |  |
|        | 35              |       |    |       |         |         | Total Sum.               |          |          |  |  |  |  |  |

Summation Credits for all the stages:

50+45+49+58=202