



In the Name of God

**Department of Petroleum, Gas, and Petrochemical Engineering,
Faculty of Engineering, Shahid Chamran University of Ahvaz (SCU),
Ahvaz, Iran, www.scu.ac.ir**

Programme of MSc Petroleum Engineering -Drilling Engineering

• **Compensatory Courses: 6 Credits**

| Code | Course Title | Credits | Prerequisite Course |
|--------|---|---------|---------------------|
| 198301 | Petroleum Geology | 3 | ---- |
| 198302 | Fundamentals of Oil Drilling and Production | 3 | ---- |

• **Compulsory Courses: 12 Credits**

| Code | Course Title | Credits | Prerequisite Course |
|--------|-------------------------------|---------|---|
| 198303 | Advanced Drilling Engineering | 3 | Fundamentals of Oil Drilling and Production |
| 198304 | Advanced Rock Mechanics | 3 | Petroleum Geology |
| 198305 | Design and Planning of Wells | 3 | Fundamentals of Oil Drilling and Production |
| 198306 | Offshore Drilling | 3 | Fundamentals of Oil Drilling and Production |

• **Elective Courses: 12 Credits**

| Code | Course Title | Credits | Prerequisite Course |
|--------|---|---------|---------------------|
| 198307 | Advanced Engineering Mathematics | 3 | ---- |
| 198308 | Transport Phenomena in Porous Media | 3 | ---- |
| 198309 | Advanced Design and Planning of Wells | 3 | ---- |
| 198311 | Well Control | 3 | ---- |
| 198312 | Applied Optimization in Drilling Engineering | 3 | ---- |
| 198313 | Advanced Rock Mechanic Application in Petroleum Engineering | 3 | ---- |
| 198314 | Multiphase Flow and Heat Transfer in Well | 3 | ---- |
| 198315 | Finite Elements | 3 | ---- |



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|--------|---|---|------|
| 198316 | Management and Planning of Oil Projects | 3 | ---- |
| 198317 | Technical and Economic Studies of Oil and Gas | 3 | ---- |
| 198318 | Directional Drilling | 3 | ---- |
| 198319 | Subsurface Technology | 3 | ---- |
| 198320 | Reservoir Geomechanics | 3 | ---- |
| 198321 | Underbalanced Drilling | 3 | ---- |
| 198322 | Application of Artificial Intelligence in Petroleum Engineering | 3 | ---- |
| 198323 | Multiphase Flow in Wells and Pipelines | 3 | ---- |
| 198324 | Advanced Production Engineering | 3 | ---- |
| 198325 | Advanced Well Testing | 3 | ---- |
| 198326 | Well Completion and Productivity | 3 | ---- |
| 198327 | Advanced Drilling Fluids | 3 | ---- |
| 198328 | Special Topics in Drilling Engineering | 3 | ---- |
| 198329 | Environmental Engineering in Drilling | 3 | ---- |
| 198330 | Blowout Control | 3 | ---- |

• **Research Courses: 8 Credits**

| Code | Course Title | Credits | Prerequisite Course |
|------|--------------|---------|---------------------|
| | Seminar | 2 | ---- |
| | Thesis | 6 | ---- |



Curriculum of MSc Petroleum Engineering-Drilling Engineering

Winter Semester 2020

| Code | Course Title | Credits | Prerequisite Course |
|--------|--|---------|---|
| 198303 | Advanced Drilling Engineering | 3 | Fundamentals of Oil Drilling and Production |
| 198323 | Multiphase Flow in Wells and Pipelines | 3 | ---- |
| 198307 | Advanced Engineering Mathematics | 3 | ---- |

Fall Semester 2020/2021

| Code | Course Title | Credits | Prerequisite Course |
|--------|------------------------------|---------|---|
| 198305 | Design and Planning of Wells | 3 | Fundamentals of Oil Drilling and Production |
| 198306 | Offshore Drilling | 3 | Fundamentals of Oil Drilling and Production |
| 198304 | Advanced Rock Mechanics | 3 | Petroleum Geology |

Winter Semester 2021

| Code | Course Title | Credits | Prerequisite Course |
|--------|-------------------------------------|---------|---------------------|
| 198327 | Advanced Drilling Fluids | 3 | ---- |
| 198308 | Transport Phenomena in Porous Media | 3 | ---- |
| | Seminar | 2 | ---- |

Fall Semester 2021/2022

| Code | Course Title | Credits | Prerequisite Course |
|------|--------------|---------|---------------------|
| | Thesis | 6 | ---- |