

# COURSE STRUCTURE

## 2025-10109 Mechanical Engineering (EN) Bachelor

| 1            |             |                                                                 |    |     |      | 2            |             |                                               |    |     |      |
|--------------|-------------|-----------------------------------------------------------------|----|-----|------|--------------|-------------|-----------------------------------------------|----|-----|------|
| №            | Course code | Title                                                           | Th | Pr  | Ects | №            | Course code | Title                                         | Th | Pr  | Ects |
| 1            | IE 115      | Work Safety                                                     | 2  | 0+0 | 4    | 1            | PHYS 149    | Physics                                       | 4  | 1+1 | 8    |
| 2            | AZD 140     | Official and Academic Communication in the Azerbaijani language | 0  | 2+0 | 4    | 2            | ME 116      | Descriptive geometry and engineering graphics | 2  | 2+0 | 5    |
| 3            | TRX 111     | History of Azerbaijan                                           | 2  | 2+0 | 5    | 3            | MATH 161    | Linear algebra and analytic geometry          | 2  | 2+0 | 4    |
| 4            | XXX XXX     | [ NAE ] Foreign language II                                     | 0  | 6+0 | 5    | 4            | ME 114      | Introduction to the specialty                 | 2  | 0+0 | 4    |
| 5            | XXX XXX     | [ NAE ] Foreign language I                                      | 0  | 6+0 | 5    | 5            | ECON 157    | Engineering economics                         | 2  | 0+0 | 4    |
| 6            | XXX XXX     | [ AE ] Area elective course X #10                               | 0  | 4+0 | 7    | 6            | XXX XXX     | [ NAE ] Foreign language III                  | 0  | 6+0 | 5    |
| Subtotal: 30 |             |                                                                 |    |     |      | Subtotal: 30 |             |                                               |    |     |      |

**3**

| № | Course code | Title                 | Th | Pr  | Ects |
|---|-------------|-----------------------|----|-----|------|
| 1 | ME 211      | Materials technology  | 2  | 0+1 | 4    |
| 2 | CHE 180     | Chemistry             | 2  | 0+1 | 5    |
| 3 | MATH 138    | Mathematical analysis | 4  | 2+0 | 8    |
| 4 | ME 122      | Computer graphics     | 1  | 2+0 | 3    |
| 5 | ME 258      | Materials Science     | 2  | 0+1 | 4    |
| 6 | ME 225      | Theoretical mechanics | 3  | 2+0 | 6    |

*Subtotal: 30***4**

| № | Course code | Title                                               | Th | Pr  | Ects |
|---|-------------|-----------------------------------------------------|----|-----|------|
| 1 | ME 236      | The resistance of materials                         | 3  | 1+1 | 6    |
| 2 | MANE 204    | Machine theory                                      | 3  | 1+1 | 7    |
| 3 | MATH 215    | Applied mathematics                                 | 2  | 2+0 | 4    |
| 4 | ME 224      | Flow mechanics                                      | 2  | 1+1 | 5    |
| 5 | ME 228      | Metrology, standardization and certification        | 2  | 0+2 | 5    |
| 6 | XXX XXX     | <b>[ NAE ]</b> Non-Area Elective Course I <b>#1</b> | 1  | 1+0 | 3    |

*Subtotal: 30***5**

| № | Course code | Title                                           | Th | Pr  | Ects |
|---|-------------|-------------------------------------------------|----|-----|------|
| 1 | EE 327      | Fundamentals of electrotechnics and electronics | 2  | 1+0 | 4    |
| 2 | MM 120      | Civil Defence                                   | 3  | 0+0 | 3    |
| 3 | COMP 379    | Fundamentals of programming                     | 1  | 2+0 | 5    |
| 4 | ME 301      | Machine production technology                   | 4  | 1+1 | 7    |
| 5 | ME 303      | Machine design                                  | 4  | 1+1 | 7    |
| 6 | PAE 321     | Fundamentals of automation                      | 2  | 1+0 | 4    |

*Subtotal: 30***6**

| № | Course code | Title                                             | Th | Pr  | Ects |
|---|-------------|---------------------------------------------------|----|-----|------|
| 1 | ME 306      | Thermodynamics                                    | 2  | 1+0 | 4    |
| 2 | XXX XXX     | <b>[ AE ]</b> Area elective course III <b>#3</b>  | 2  | 0+1 | 4    |
| 3 | XXX XXX     | <b>[ AE ]</b> Area elective course VIII <b>#8</b> | 3  | 2+0 | 7    |
| 4 | XXX XXX     | <b>[ AE ]</b> Area elective course V <b>#5</b>    | 2  | 2+2 | 8    |
| 5 | XXX XXX     | <b>[ AE ]</b> Area elective course XI <b>#11</b>  | 3  | 2+0 | 7    |

*Subtotal: 30*

## 7

| № | Course code | Title                                                | Th | Pr  | Ects |
|---|-------------|------------------------------------------------------|----|-----|------|
| 1 | XXX XXX     | [ <b>AE</b> ] Area elective course IX <b>#9</b>      | 3  | 2+0 | 8    |
| 2 | XXX XXX     | [ <b>AE</b> ] Area elective course VII <b>#7</b>     | 4  | 2+0 | 8    |
| 3 | XXX XXX     | [ <b>NAE</b> ] Non-Area Elective Course II <b>#2</b> | 1  | 1+0 | 3    |
| 4 | XXX XXX     | [ <b>AE</b> ] Area elective course IV <b>#4</b>      | 2  | 1+0 | 3    |
| 5 | XXX XXX     | [ <b>AE</b> ] Area elective course VI <b>#6</b>      | 3  | 2+1 | 8    |

*Subtotal: 30*

## 8

| № | Course code | Title      | Th | Pr  | Ects |
|---|-------------|------------|----|-----|------|
| 1 | ME 490      | Internship | 0  | 0+0 | 21   |
| 2 | ME 497      | Thesis     | 0  | 0+0 | 9    |

*Subtotal: 30*

Total ECTS credits: **240**

### **AE - Area Elective Courses**

| №  | Course code | Title                                          | Th | Pr  | Ects |
|----|-------------|------------------------------------------------|----|-----|------|
| 1  | ME 336      | Turbocharges                                   | 2  | 0+1 | 4    |
| 2  | ME 308      | Heat transfer                                  | 2  | 0+1 | 4    |
| 3  | ME 338      | Agricultural machinery                         | 2  | 0+1 | 4    |
| 4  | MINF 461    | Probability theory and mathematical statistics | 2  | 1+0 | 3    |
| 5  | MATH 214    | Engineering mathematics                        | 2  | 1+0 | 3    |
| 6  | MATH 405    | Numerical methods                              | 2  | 1+0 | 3    |
| 7  | ME 342      | Technological equipment                        | 2  | 2+2 | 8    |
| 8  | ME 346      | Quality control in production                  | 2  | 2+2 | 8    |
| 9  | ME 340      | Welding application and basics                 | 2  | 2+2 | 8    |
| 10 | ME 339      | Hydraulic and pneumatic circuits               | 3  | 2+1 | 8    |
| 11 | ME 337      | Hydraulic machines and transmissions           | 3  | 2+1 | 8    |

|    |        |                                                |   |     |   |  |
|----|--------|------------------------------------------------|---|-----|---|--|
| 12 | ME 493 | Renewable energy sources                       | 3 | 2+1 | 8 |  |
| 13 | ME 467 | Lifting machines                               | 4 | 2+0 | 8 |  |
| 14 | ME 465 | Elevators                                      | 4 | 2+0 | 8 |  |
| 15 | ME 469 | Continuous transport vehicles                  | 4 | 2+0 | 8 |  |
| 16 | ME 348 | Tribology                                      | 3 | 2+0 | 7 |  |
| 17 | ME 358 | Dynamics of machines                           | 3 | 2+0 | 7 |  |
| 18 | ME 356 | Machine repair technology                      | 3 | 2+0 | 7 |  |
| 19 | ME 461 | Diagnostics of machines                        | 3 | 2+0 | 8 |  |
| 20 | ME 459 | CAD / CAM systems in mechanical engineering    | 3 | 2+0 | 8 |  |
| 21 | ME 463 | Flow line equipment                            | 3 | 2+0 | 8 |  |
| 22 | ME 119 | Heating, cooling and ventilation systems       | 0 | 4+0 | 7 |  |
| 23 | ME 121 | Biomaterials and biomechanics                  | 0 | 4+0 | 7 |  |
| 24 | ME 123 | Introduction to nanotechnology and nanosystems | 0 | 4+0 | 7 |  |
| 25 | ME 113 | Technical foreign language                     | 0 | 4+0 | 7 |  |
| 26 | ME 364 | Electric and hybrid vehicles                   | 3 | 2+0 | 7 |  |
| 27 | ME 360 | Metalworking machines and tools                | 3 | 2+0 | 7 |  |
| 28 | ME 366 | Mechanics of plastic materials                 | 3 | 2+0 | 7 |  |
|    |        |                                                |   |     |   |  |
|    |        |                                                |   |     |   |  |

| <b><i>NAE - Non-Area Elective Courses</i></b> |             |                                                                      |    |     |      |  |
|-----------------------------------------------|-------------|----------------------------------------------------------------------|----|-----|------|--|
| No                                            | Course code | Title                                                                | Th | Pr  | Ects |  |
| 1                                             | PHIL 159    | Philosophy                                                           | 1  | 1+0 | 3    |  |
| 2                                             | ME 238      | Research methods                                                     | 1  | 1+0 | 3    |  |
| 3                                             | SOC 180     | Ethics and aesthetics                                                | 1  | 1+0 | 3    |  |
| 4                                             | PHIL 120    | Logic                                                                | 1  | 1+0 | 3    |  |
| 5                                             | SOC 110     | Sociology                                                            | 1  | 1+0 | 3    |  |
| 6                                             | SOC 150     | Introduction to Multiculturalism                                     | 1  | 1+0 | 3    |  |
| 7                                             | LAW 110     | Constitution of Republic of Azerbaijan and Fundamentals of Law       | 1  | 1+0 | 3    |  |
| 8                                             | IT 113      | Information management                                               | 1  | 1+0 | 3    |  |
| 9                                             | BA 108      | Principles of Entrepreneurship and Introduction to Business          | 1  | 1+0 | 3    |  |
| 10                                            | PA 139      | Politology                                                           | 1  | 1+0 | 3    |  |
| 11                                            | IT 464      | Information Technology (Mechanical Engineering)                      | 1  | 1+0 | 3    |  |
| 12                                            | ENG 015     | English for business and academic communication-1 (reading- writing) | 0  | 6+0 | 5    |  |

|    |         |                                                                             |   |     |   |
|----|---------|-----------------------------------------------------------------------------|---|-----|---|
| 13 | ENG 025 | English for business and academic communication-2 (listening comprehension) | 0 | 6+0 | 5 |
| 14 | ENG 040 | English for business and academic communication-3 (for academic purposes)   | 0 | 6+0 | 5 |
|    |         |                                                                             |   |     |   |
|    |         |                                                                             |   |     |   |