

# COURSE STRUCTURE

## 2025-10156 Physics (EN) Bachelor

| 1            |             |                                                                 |    |     |      | 2            |             |                                       |    |     |      |
|--------------|-------------|-----------------------------------------------------------------|----|-----|------|--------------|-------------|---------------------------------------|----|-----|------|
| No           | Course code | Title                                                           | Th | Pr  | Ects | No           | Course code | Title                                 | Th | Pr  | Ects |
| 1            | AZD 140     | Official and Academic Communication in the Azerbaijani language | 0  | 2+0 | 4    | 1            | MATH 175    | Integral calculus                     | 2  | 2+0 | 5    |
| 2            | MATH 179    | Differential calculus                                           | 2  | 2+0 | 5    | 2            | PHS 102     | Molecular Physics                     | 2  | 1+1 | 6    |
| 3            | PHS 101     | Mechanics and the theory of relativity                          | 2  | 1+1 | 6    | 3            | MATH 177    | Analytic geometry and tensor calculus | 2  | 2+0 | 5    |
| 4            | PHS XXX     | [ AE ] Area Elective Course I #1                                | 0  | 2+0 | 5    | 4            | PHS XXX     | [ AE ] Area Elective Course II #2     | 0  | 3+0 | 6    |
| 5            | XXX XXX     | [ NAE ] Foreign language I                                      | 0  | 6+0 | 5    | 5            | XXX XXX     | [ NAE ] Foreign language III          | 0  | 6+0 | 5    |
| 6            | XXX XXX     | [ NAE ] Foreign language II                                     | 0  | 6+0 | 5    | 6            | XXX XXX     | [ NAE ] Non-Area Elective Course I #1 | 2  | 0+0 | 3    |
| Subtotal: 30 |             |                                                                 |    |     |      | Subtotal: 30 |             |                                       |    |     |      |

### 3

| № | Course code | Title                                            | Th | Pr  | Ects |
|---|-------------|--------------------------------------------------|----|-----|------|
| 1 | MM 120      | Civil Defence                                    | 3  | 0+0 | 3    |
| 2 | PHS 201     | Electricity and magnetism                        | 3  | 1+1 | 7    |
| 3 | TRX 111     | History of Azerbaijan                            | 2  | 2+0 | 5    |
| 4 | MATH 204    | Theory of complex variable functions             | 1  | 1+0 | 4    |
| 5 | MATH 276    | Higher algebra                                   | 2  | 2+0 | 4    |
| 6 | PHS XXX     | [ <b>AE</b> ] Area Elective Course III <b>#3</b> | 3  | 2+0 | 7    |

*Subtotal: 30*

### 4

| № | Course code | Title                                                | Th | Pr  | Ects |
|---|-------------|------------------------------------------------------|----|-----|------|
| 1 | MATH 288    | Differential and integral equations                  | 2  | 2+0 | 5    |
| 2 | PHS 202     | Optics                                               | 3  | 1+1 | 6    |
| 3 | PHS 204     | Classic mechanics                                    | 2  | 2+0 | 6    |
| 4 | PHS 206     | Physical fundamentals of electronics                 | 2  | 0+2 | 5    |
| 5 | CHE 262     | Chemistry                                            | 2  | 0+2 | 5    |
| 6 | XXX XXX     | [ <b>NAE</b> ] Non-Area Elective Course II <b>#2</b> | 2  | 0+0 | 3    |

*Subtotal: 30*

## 5

| № | Course code | Title                                           | Th | Pr  | Ects |
|---|-------------|-------------------------------------------------|----|-----|------|
| 1 | PHS 303     | Computer programs in physics                    | 2  | 0+2 | 5    |
| 2 | PHS 301     | Atomic physics                                  | 3  | 1+1 | 6    |
| 3 | PHS 305     | Electrodynamics                                 | 2  | 2+0 | 6    |
| 4 | PHS XXX     | <b>[ AE ]</b> Area Elective Course IV <b>#4</b> | 2  | 2+0 | 6    |
| 5 | PHS XXX     | <b>[ AE ]</b> Area Elective Course V <b>#5</b>  | 2  | 1+2 | 7    |

*Subtotal: 30*

## 6

| № | Course code | Title                                            | Th | Pr  | Ects |
|---|-------------|--------------------------------------------------|----|-----|------|
| 1 | PHS 302     | Nuclear physics                                  | 2  | 2+0 | 6    |
| 2 | PHS 304     | Quantum mechanics                                | 2  | 2+0 | 6    |
| 3 | AST 304     | Astrophysics                                     | 2  | 2+0 | 5    |
| 4 | PHS 306     | Condensed matter physics                         | 2  | 2+0 | 4    |
| 5 | PHS XXX     | <b>[ AE ]</b> Area Elective Course VI <b>#6</b>  | 2  | 0+0 | 4    |
| 6 | PHS XXX     | <b>[ AE ]</b> Area Elective Course VII <b>#7</b> | 2  | 0+2 | 5    |

*Subtotal: 30*

# 7

| № | Course code | Title                                             | Th | Pr  | Ects |
|---|-------------|---------------------------------------------------|----|-----|------|
| 1 | PHS 403     | Quantum Mechanics of Many-Electron Systems        | 2  | 2+0 | 4    |
| 2 | PHS 401     | Thermodynamics and statistical physics            | 3  | 2+0 | 6    |
| 3 | PHS XXX     | [ <b>AE</b> ] Area Elective Course IX <b>#9</b>   | 2  | 2+0 | 7    |
| 4 | PHS XXX     | [ <b>AE</b> ] Area Elective Course VIII <b>#8</b> | 2  | 2+0 | 6    |
| 5 | PHS XXX     | [ <b>AE</b> ] Area Elective Course X <b>#10</b>   | 2  | 2+0 | 7    |

*Subtotal: 30*

# 8

| № | Course code | Title           | Th | Pr  | Ects |
|---|-------------|-----------------|----|-----|------|
| 1 | PHS 498     | Graduation work | 0  | 0+0 | 9    |
| 2 | PHS 490     | Internship      | 0  | 0+0 | 21   |

*Subtotal: 30*

Total ECTS credits: **240**

## **AE - Area Elective Courses**

| № | Course code | Title                             | Th | Pr  | Ects |
|---|-------------|-----------------------------------|----|-----|------|
| 1 | PHS 103     | Problem solving methods           | 0  | 2+0 | 5    |
| 2 | PHS 105     | Essential physics                 | 0  | 2+0 | 5    |
| 3 | PHS 108     | Experimental physics              | 0  | 3+0 | 6    |
| 4 | PHS 104     | Problem solving in physics course | 0  | 3+0 | 6    |
| 5 | PHS 205     | The structure of the molecule     | 3  | 2+0 | 7    |
| 6 | PHS 203     | Mathematical methods of physics   | 3  | 2+0 | 7    |
| 7 | PHS 307     | Physics of semiconductors         | 2  | 2+0 | 6    |
| 8 | PHS 309     | Physics of Nanoparticles          | 2  | 2+0 | 6    |
| 9 | PHS 313     | Physical electronics              | 2  | 1+2 | 7    |

