

**BALIKESİR ÜNİVERSİTESİ**  
**BALIKESİR MESLEK YÜKSEKOKULU**  
**ELEKTRİK VE ENERJİ BÖLÜMÜ**  
**İKLİMLENDİRME VE SOĞUTMA TEKNOLOJİSİ PROGRAMI**  
**2026-2027 EĞİTİM-ÖĞRETİM YILI DERS PLANI**

| 1. YARIYIL   |                                                 |          |    |   |   |     |      |                          |                          | 2. YARIYIL   |                                       |          |    |   |   |      |      |                          |                          |
|--------------|-------------------------------------------------|----------|----|---|---|-----|------|--------------------------|--------------------------|--------------|---------------------------------------|----------|----|---|---|------|------|--------------------------|--------------------------|
| DERS KODU    | DERSİN ADI                                      | Kategori | T  | U | L | K   | AKTS | Yarıyıl İçi              |                          | DERS KODU    | DERSİN ADI                            | Kategori | T  | U | L | K    | AKTS | Yarıyıl İçi              |                          |
|              |                                                 |          |    |   |   |     |      | Ölçme Faaliyetleri (%40) |                          |              |                                       |          |    |   |   |      |      | Ölçme Faaliyetleri (%40) |                          |
|              |                                                 |          |    |   |   |     |      | Yazılı Sınav             | Diğer Ölçme Faaliyetleri |              |                                       |          |    |   |   |      |      | Yazılı Sınav             | Diğer Ölçme Faaliyetleri |
| ISO1114      | Mesleki Matematik                               | Z        | 1  | 1 | 0 | 1.5 | 2    | 40%                      |                          | ISO1217      | Elektromekanik Kumanda Devreleri      | Z        | 1  | 2 | 0 | 2    | 2    | 20%                      | Uygulama 20%             |
| ISO1120      | Florlu Soğutucu Akışkanlar ve İklim Değişikliği | Z        | 3  | 0 | 0 | 3   | 3    | 40%                      |                          | KRY1201      | Kariyer Planlama                      | Z        | 1  | 0 | 0 | 1    | 2    | 40%                      |                          |
| ISO1115      | Kaynak Teknolojisi                              | Z        | 2  | 1 | 0 | 2.5 | 3    | 20%                      | Uygulama 20%             | ISO1216      | Çevre Koruma                          | Z        | 2  | 0 | 0 | 2    | 2    | 20%                      | Sunum 20%                |
| ISO1110      | Teknik Resim                                    | Z        | 2  | 1 | 0 | 2.5 | 3    | 20%                      | Ödev 20%                 | ISO1218      | Soğutucu Sistemlerde Servis İşlemleri | Z        | 2  | 2 | 0 | 3    | 4    | 20%                      | Uygulama 20%             |
| ISO1116      | Temel Elektrik                                  | Z        | 2  | 1 | 0 | 2.5 | 3    | 40%                      |                          | ISO1219      | Bilgisayar Destekli Tasarım           | Z        | 1  | 1 | 0 | 1.5  | 2    | 40%                      |                          |
| ISO1113      | İş Sağlığı ve Güvenliği                         | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          |              | Seçmeli Ders-1                        | S        | 2  | 1 | 0 | 2.5  | 3    |                          |                          |
| ISO1117      | Bireysel İklimlendirme Sistemleri               | Z        | 2  | 1 | 0 | 2.5 | 3    | 40%                      |                          |              | Seçmeli Ders-2                        | S        | 2  | 1 | 0 | 2.5  | 3    |                          |                          |
| ISO1118      | İklimlendirme ve Soğutma Kavramları             | Z        | 2  | 1 | 0 | 2.5 | 3    | 40%                      |                          |              | Seçmeli Ders-3                        | S        | 2  | 1 | 0 | 2.5  | 3    |                          |                          |
| ISO1119      | Termodinamik                                    | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          |              | Seçmeli Ders-4                        | S        | 2  | 1 | 0 | 2.5  | 3    |                          |                          |
| TOPLAM       |                                                 |          | 18 | 6 | 0 | 21  | 24   | 40%                      |                          | TOPLAM       |                                       |          | 15 | 9 | 0 | 19.5 | 24   |                          |                          |
|              |                                                 |          |    |   |   |     |      |                          |                          |              |                                       |          |    |   |   |      |      |                          |                          |
| AIT1101      | Atatürk İlkeleri ve İnkılap Tarihi-I            | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          | AIT1201      | Atatürk İlkeleri ve İnkılap Tarihi-II | Z        | 2  | 0 | 0 | 2    | 2    | 40%                      |                          |
| TDI1101      | Türk Dili-I                                     | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          | TDI1201      | Türk Dili-II                          | Z        | 2  | 0 | 0 | 2    | 2    | 40%                      |                          |
| YDI1101      | Yabancı Dil (İngilizce)-I                       | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          | YDI1201      | Yabancı Dil (İngilizce)-II            | Z        | 2  | 0 | 0 | 2    | 2    | 40%                      |                          |
| GENEL TOPLAM |                                                 |          | 24 | 6 | 0 | 27  | 30   |                          |                          | GENEL TOPLAM |                                       |          | 21 | 9 | 0 | 25.5 | 30   |                          |                          |

| 2. YARIYIL SEÇMELİ DERSLERİ |                                  |   |   |   |   |     |   |     |  |
|-----------------------------|----------------------------------|---|---|---|---|-----|---|-----|--|
| ISO1220                     | Isıtma Sistemleri                | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1221                     | Havalandırma Sistemleri          | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1222                     | İç Hava Kalitesi                 | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1223                     | Merkezi İklimlendirme Sistemleri | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1224                     | Güneş Enerjisi                   | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1225                     | Taşıt İklimlendirmesi            | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1226                     | Enerji Yönetimi                  | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1227                     | Ölçme Tekniği                    | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1228                     | Yenilenebilir Enerji Sistemleri  | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1229                     | Isı Değiştiriciler               | S | 2 | 1 | 0 | 2.5 | 3 | 40% |  |

| 3. YARIYIL   |                           |          |    |   |   |     |      |                          |                          |
|--------------|---------------------------|----------|----|---|---|-----|------|--------------------------|--------------------------|
| DERS KODU    | DERSİN ADI                | Kategori | T  | U | L | K   | AKTS | Yarıyıl İçi              |                          |
|              |                           |          |    |   |   |     |      | Ölçme Faaliyetleri (%40) |                          |
|              |                           |          |    |   |   |     |      | Yazılı Sınav             | Diğer Ölçme Faaliyetleri |
| ISO2122      | Soğutma Sistem Tasarımı   | Z        | 2  | 1 | 0 | 2.5 | 3    | 20%                      | Uygulama 20%             |
| ISO2110      | Ticari Soğutma Sistemleri | Z        | 2  | 1 | 0 | 2.5 | 3    | 40%                      |                          |
| ISO2123      | Meslek Etiği              | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          |
| ISO2124      | Girişimcilik              | Z        | 2  | 0 | 0 | 2   | 2    | 40%                      |                          |
| ISO2125      | Laboratuvar               | Z        | 1  | 1 | 0 | 1.5 | 2    | 40%                      |                          |
|              | Seçmeli Ders-1            | S        | 2  | 1 | 0 | 2.5 | 5    |                          |                          |
|              | Seçmeli Ders-2            | S        | 2  | 1 | 0 | 2.5 | 3    |                          |                          |
|              | Seçmeli Ders-3            | S        | 2  | 1 | 0 | 2.5 | 3    |                          |                          |
|              | Seçmeli Ders-4            | S        | 2  | 1 | 0 | 2.5 | 3    |                          |                          |
|              | Seçmeli Ders-5            | S        | 1  | 1 | 0 | 1.5 | 2    |                          |                          |
|              | Seçmeli Ders-6            | S        | 2  | 0 | 0 | 2   | 2    |                          |                          |
| GENEL TOPLAM |                           |          | 20 | 8 | 0 | 24  | 30   |                          |                          |

| 4. YARIYIL   |                          |          |   |    |   |    |      |                          |                          |
|--------------|--------------------------|----------|---|----|---|----|------|--------------------------|--------------------------|
| DERS KODU    | DERSİN ADI               | Kategori | T | U  | L | K  | AKTS | Yarıyıl İçi              |                          |
|              |                          |          |   |    |   |    |      | Ölçme Faaliyetleri (%40) |                          |
|              |                          |          |   |    |   |    |      | Yazılı Sınav             | Diğer Ölçme Faaliyetleri |
| ISO2224      | İşletmede Mesleki Eğitim | Z        | 5 | 22 | 0 | 16 | 30   | 40%                      |                          |
| GENEL TOPLAM |                          |          | 5 | 22 | 0 | 16 | 30   |                          |                          |

| 3. YARIYIL SEÇMELİ DERSLERİ |                                                         |   |   |   |   |     |   |     |              |
|-----------------------------|---------------------------------------------------------|---|---|---|---|-----|---|-----|--------------|
| ISO2126                     | Koruyucu Bakım ve Arıza Tespiti                         | S | 2 | 1 | 0 | 2.5 | 5 | 20% |              |
| ISO2127                     | Isı Pompaları ve Uygulamaları                           | S | 2 | 1 | 0 | 2.5 | 5 | 40% |              |
| ISO2128                     | Doğalgaz Tesisatı                                       | S | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2129                     | İklimlendirme ve Soğutma Sistemlerinde Dijital Çözümler | S | 2 | 1 | 0 | 2.5 | 3 | 40% | Uygulama 20% |
| ISO2130                     | Yalıtım Teknolojisi                                     | S | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2131                     | Serviste Davranış                                       | S | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2132                     | Akışkanlar Mekaniği                                     | S | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2133                     | Sistem Analizi ve Tasarımı                              | S | 1 | 1 | 0 | 1.5 | 2 | 40% |              |
| ISO2134                     | Etüt ve Proje Teknikleri                                | S | 1 | 1 | 0 | 1.5 | 2 | 40% |              |
| ISO2135                     | İletişim Yönetim ve Denetleme                           | S | 2 | 0 | 0 | 2   | 2 | 40% |              |
| ISO2136                     | Mesleki Yabancı Dil                                     | S | 2 | 0 | 0 | 2   | 2 | 40% |              |
| ISO2137                     | Kalite Güvencesi ve Standartlar                         | S | 2 | 0 | 0 | 2   | 2 | 40% |              |

**KATEGORİ :**

**Z** Zorunlu  
**S** Seçmeli

**BALIKESIR UNIVERSITY**  
**BALIKESIR VOCATIONAL SCHOOL**  
**DEPARTMENT OF ELECTRICITY AND ENERGY**  
**AIR CONDITIONING AND REFRIGERATION TECHNOLOGY PROGRAM**  
**2026-2027 ACADEMIC YEAR COURSE PLAN**

| 1st SEMESTER |                                               |          |    |   |   |     |      |                                      |                              | 2nd SEMESTER |                                             |          |    |   |   |      |      |                                      |                              |
|--------------|-----------------------------------------------|----------|----|---|---|-----|------|--------------------------------------|------------------------------|--------------|---------------------------------------------|----------|----|---|---|------|------|--------------------------------------|------------------------------|
| COURSE CODE  | COURSE                                        | Category | T  | P | L | C   | ECTS | Mid-Term Assessment Activities (40%) |                              | COURSE CODE  | COURSE                                      | Category | T  | P | L | C    | ECTS | Mid-Term Assessment Activities (40%) |                              |
|              |                                               |          |    |   |   |     |      | Written Exam                         | Other Measurement Activities |              |                                             |          |    |   |   |      |      | Written Exam                         | Other Measurement Activities |
| ISO1114      | Vocational Mathematics                        | C        | 1  | 1 | 0 | 1.5 | 2    | 40%                                  |                              | ISO1217      | Electromechanical Control Circuits          | C        | 1  | 2 | 0 | 2    | 2    | 20%                                  | Practice 20%                 |
| ISO1108      | Fluorinated Refrigerants and Climate Change   | C        | 3  | 0 | 0 | 3   | 3    | 40%                                  |                              | KRY1201      | Career Planning                             | C        | 1  | 0 | 0 | 1    | 2    | 40%                                  |                              |
| ISO1115      | Welding Technology                            | C        | 2  | 1 | 0 | 2.5 | 3    | 20%                                  | Practice 20%                 | ISO1216      | Environmental Protection                    | C        | 2  | 0 | 0 | 2    | 2    | 20%                                  | Presentation 20%             |
| ISO1110      | Technical Drawing                             | C        | 2  | 1 | 0 | 2.5 | 3    | 20%                                  | Homework 20%                 | ISO1218      | Service Operations in Refrigeration Systems | C        | 2  | 2 | 0 | 3    | 4    | 20%                                  | Practice 20%                 |
| ISO1116      | Fundamentals of Electricity                   | C        | 2  | 1 | 0 | 2.5 | 3    | 40%                                  |                              | ISO1219      | Computer-Aided Design                       | C        | 1  | 1 | 0 | 1.5  | 2    | 40%                                  |                              |
| ISO1113      | Occupational Health and Safety                | C        | 2  | 0 | 0 | 2   | 2    | 40%                                  |                              |              | Elective Course-1                           | E        | 2  | 1 | 0 | 2.5  | 3    |                                      |                              |
| ISO1117      | Individual Air Conditioning Systems           | C        | 2  | 1 | 0 | 2.5 | 3    | 40%                                  |                              |              | Elective Course-2                           | E        | 2  | 1 | 0 | 2.5  | 3    |                                      |                              |
| ISO1118      | Air Conditioning and Refrigeration Principles | C        | 2  | 1 | 0 | 2.5 | 3    | 40%                                  |                              |              | Elective Course-3                           | E        | 2  | 1 | 0 | 2.5  | 3    |                                      |                              |
| ISO1119      | Thermodynamics                                | C        | 2  | 0 | 0 | 2   | 2    | 40%                                  |                              |              | Elective Course-4                           | E        | 2  | 1 | 0 | 2.5  | 3    |                                      |                              |
| TOTAL        |                                               |          | 18 | 6 | 0 | 21  | 24   | 40%                                  |                              | TOTAL        |                                             |          | 15 | 9 | 0 | 19.5 | 24   |                                      |                              |

|               |                                                  |   |    |   |   |    |    |     |  |               |                                                    |   |    |   |   |      |    |     |  |
|---------------|--------------------------------------------------|---|----|---|---|----|----|-----|--|---------------|----------------------------------------------------|---|----|---|---|------|----|-----|--|
| AIT1101       | Ataturk's Principals and History of Revolution-I | C | 2  | 0 | 0 | 2  | 2  | 40% |  | AIT1201       | Ataturk's Principals and History of Revolution -II | C | 2  | 0 | 0 | 2    | 2  | 40% |  |
| TDI1101       | Turkish Language-I                               | C | 2  | 0 | 0 | 2  | 2  | 40% |  | TDI1201       | Turkish Language-II                                | C | 2  | 0 | 0 | 2    | 2  | 40% |  |
| YDI1101       | English-I                                        | C | 2  | 0 | 0 | 2  | 2  | 40% |  | YDI1201       | English-II                                         | C | 2  | 0 | 0 | 2    | 2  | 40% |  |
| TOTAL CREDITS |                                                  |   | 24 | 6 | 0 | 27 | 30 |     |  | TOTAL CREDITS |                                                    |   | 21 | 9 | 0 | 25.5 | 30 |     |  |

| 3rd SEMESTER  |                                  |          |    |   |   |     |      |                                      |                              |
|---------------|----------------------------------|----------|----|---|---|-----|------|--------------------------------------|------------------------------|
| COURSE CODE   | COURSE                           | Category | T  | P | L | C   | ECTS | Mid-Term Assessment Activities (40%) |                              |
|               |                                  |          |    |   |   |     |      | Written Exam                         | Other Measurement Activities |
| ISO2122       | Refrigeration System Design      | C        | 2  | 1 | 0 | 2.5 | 3    | 20%                                  | Practice 20%                 |
| ISO2110       | Commercial Refrigeration Systems | C        | 2  | 1 | 0 | 2.5 | 3    | 40%                                  |                              |
| ISO2123       | Professional Ethics              | C        | 2  | 0 | 0 | 2   | 2    | 40%                                  |                              |
| ISO2124       | Entrepreneurship                 | C        | 2  | 0 | 0 | 2   | 2    | 40%                                  |                              |
| ISO2125       | Laboratory                       | C        | 1  | 1 | 0 | 1.5 | 2    | 40%                                  |                              |
|               | Elective Course-1                | E        | 2  | 1 | 0 | 2.5 | 5    |                                      |                              |
|               | Elective Course-2                | E        | 2  | 1 | 0 | 2.5 | 3    |                                      |                              |
|               | Elective Course-3                | E        | 2  | 1 | 0 | 2.5 | 3    |                                      |                              |
|               | Elective Course-4                | E        | 2  | 1 | 0 | 2.5 | 3    |                                      |                              |
|               | Elective Course-5                | E        | 1  | 1 | 0 | 1.5 | 2    |                                      |                              |
|               | Elective Course-6                | E        | 2  | 0 | 0 | 2   | 2    |                                      |                              |
| TOTAL CREDITS |                                  |          | 20 | 8 | 0 | 24  | 30   |                                      |                              |

| 3rd SEMESTER ELECTIVE COURSES |                                                        |   |   |   |   |     |   |     |              |
|-------------------------------|--------------------------------------------------------|---|---|---|---|-----|---|-----|--------------|
| ISO2126                       | Preventive Maintenance and Fault Diagnosis             | E | 2 | 1 | 0 | 2.5 | 5 | 20% |              |
| ISO2127                       | Heat Pumps and Applications                            | E | 2 | 1 | 0 | 2.5 | 5 | 40% |              |
| ISO2128                       | Natural Gas Installation Systems                       | E | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2129                       | Digital Technologies in HVAC and Refrigeration Systems | E | 2 | 1 | 0 | 2.5 | 3 | 40% | Practice 20% |
| ISO2130                       | Insulation Technology                                  | E | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2131                       | Professional Conduct in Service                        | E | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2132                       | Fluid Mechanics                                        | E | 2 | 1 | 0 | 2.5 | 3 | 40% |              |
| ISO2133                       | System Analysis and Design                             | E | 1 | 1 | 0 | 1.5 | 2 | 40% |              |
| ISO2134                       | Project Planning and Survey Techniques                 | E | 1 | 1 | 0 | 1.5 | 2 | 40% |              |
| ISO2135                       | Communication Management and Supervision               | E | 2 | 0 | 0 | 2   | 2 | 40% |              |
| ISO2136                       | Vocational Foreign Language                            | E | 2 | 0 | 0 | 2   | 2 | 40% |              |
| ISO2137                       | Quality Assurance and Standards                        | E | 2 | 0 | 0 | 2   | 2 | 40% |              |

CATEGORY:

- C            Compulsory  
E            Elective

| 2nd SEMESTER ELECTIVE COURSES |                                     |   |   |   |   |     |   |     |  |
|-------------------------------|-------------------------------------|---|---|---|---|-----|---|-----|--|
| ISO1220                       | Heating Systems                     | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1221                       | Ventilation Systems                 | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1222                       | Indoor Air Quality                  | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1223                       | Central Air Conditioning Systems    | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1224                       | Solar Energy                        | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1225                       | Automotive Air Conditioning Systems | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1226                       | Energy Management                   | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1227                       | Measurement Techniques              | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1228                       | Renewable Energy Systems            | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |
| ISO1229                       | Heat Exchangers                     | E | 2 | 1 | 0 | 2.5 | 3 | 40% |  |

| 4th SEMESTER  |                                 |          |   |    |   |    |      |                                      |                              |
|---------------|---------------------------------|----------|---|----|---|----|------|--------------------------------------|------------------------------|
| COURSE CODE   | COURSE                          | Category | T | P  | L | C  | ECTS | Mid-Term Assessment Activities (40%) |                              |
|               |                                 |          |   |    |   |    |      | Written Exam                         | Other Measurement Activities |
| ISO2224       | Vocational Training in Business | C        | 5 | 22 | 0 | 16 | 30   | 40%                                  |                              |
| TOTAL CREDITS |                                 |          | 5 | 22 | 0 | 16 | 30   |                                      |                              |