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|  | | | **BURSA ULUDAĞ ÜNİVERSİTESİ**  **FEN BİLİMLERİ ENSTİTÜSÜ**  **2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI** | | | | | | | | | | | | **FR 1.1.1\_02** | | | |
| **ANABİLİM/ ANASANAT DALI** | | | | OTOMOTİV MÜHENDİSLİĞİ | | | | | | | | | | | | | | |
| **BİLİM/ SANAT DALI / PROGRAMI** | | | | Otomotiv Mühendisliği / Tezsiz Yüksek Lisans Programı | | | | | | | | | | | | | | |
| **DERS AŞAMASI** | **I. YARIYIL / GÜZ** | | | | | | | | | | **II. YARIYIL / BAHAR** | | | | | | | |
| **Kodu** | **Dersin Adı** | | | **Türü** | **T** | **U** | **L** | **Kredi** | **AKTS** | **Kodu** | **Dersin Adı** | **Türü** | **T** | **U** | **L** | **Kredi** | **AKTS** |
| OTO5119 | TAŞIT TRANSMİSYON SİSTEMLERİ TASARIMI | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5120 | ÜRETİM VE MONTAJ TEKNOLOJİLERİ | Z | 3 | 0 | 0 | 3 | 7,5 |
| OTO5159 | SİSTEM MODELLEME VE BENZETİM | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5162 | İLERİ TAŞIT DİNAMİĞİ | Z | 3 | 0 | 0 | 3 | 7,5 |
| OTO5165 | TAŞIT TASARIM ESASLARI | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5102 | OTOMOTİV MÜHENDİSLİĞİNDE NUMERİK ANALİZ VE OPTİMİZASYON YÖNTEMLERİ | Z | 3 | 0 | 0 | 3 | 7,5 |
| OTO5123 | TAŞITLARDA ELEKTRİK VE ELEKTRONİK SİSTEMLER | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5114 | ALTERNATİF TAHRİK SİSTEMLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5124 | MOTOR TASARIM VE KONTROL TEMELLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5128 | OTOMOTİV MÜHENDİSLİĞİNDE SONLU ELEMANLAR UYGULAMALARI | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5130 | TAŞIT İÇ TASARIMI | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5134 | AERODİNAMİK MODELLEME ESASLARI | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5136 | İÇTEN YANMALI MOTORLARDA ÖZEL KONULAR | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5140 | TAŞITLARDA İLERİ ÜRETİM TEKNOLOJİLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5142 | OTOMOTİV ELEKTRONİĞİNDE ARA YÜZ DEVRELERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5144 | TAŞITLARDA GÖMÜLÜ KONTROL SİSTEMLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5146 | İÇTEN YANMALI MOTOR TESTLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5148 | OTOMOTİVDE TRİBOLOJİK SİSTEMLER | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5150 | OTOMOTİVDE AKIŞKAN DENETİM SİSTEMLERİ VE UYGULAMALARI | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5152 | TAŞIT SÜSPANSİYON SİSTEMLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5154 | OTOMOTİV MÜHENDİSLİĞİNDE BİLGİSAYAR DESTEKLİ SİMÜLASYON | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5156 | TAŞIT TASARIMI VE İMALATINDA ÖZEL KONULAR | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5158 | GÜVENİLİRLİK TEMELLİ TASARIM | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5160 | TAŞIT EMİSYONLARI VE KONTROL SİSTEMLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5164 | TAŞITLARDA AYRIK ZAMANLI DENETİM SİSTEMLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5166 | ELEKTRİKLİ VE HİBRİD ARAÇLARIN TASARIM ESASLARI | S | 3 | 0 | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5168 | EKLEMELİ İMALAT TEKNOLOJİLERİ | S | 3 | 0 | 0 | 3 | 7,5 |
| **Toplam Kredi/AKTS** | | | | | | | | **12** | **30** | **Toplam Kredi/AKTS** | | | | | | **12** | **30** |
| **TEZ AŞAMASI** | **III. YARIYIL / GÜZ** | | | | | | | | | |  | | | | | | | |
| OTO5101 | PROJE | | | Z | 0 | 1 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5121 | GÖVDE TASARIM VE FORM GELİŞTİRME | | | Z | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5129 | MOTORLARDA KARIŞIM OLUŞUM TEKNİKLERİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5131 | İÇTEN YANMALI MOTORLAR | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5133 | İÇTEN YANMALI MOTORUN TAŞITA UYGULANMASI | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5135 | TAŞITLARDA TİTREŞİM VE GÜRÜLTÜ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5137 | SONLU ELEMANLAR ANALİZİNİN ESASLARI | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5141 | TAŞIT İKLİMLENDİRME SİSTEMLERİ VE ISIL KONFOR | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5143 | TAŞITLARDA SENSÖR VE EYLEYİCİLER | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5145 | TAŞITLARDA BÜTÜNLEŞİK TANI KOYMA SİSTEMLERİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5147 | OTOMOTİVDE MÜHENDİSLİK SİSTEMLERİNİN MODELLENMESİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5149 | TAŞITLARDA POLİMERLERİN KULLANIMI | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5153 | İLERİ MUKAVEMET | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5155 | OTOMOTİV MÜHENDİSLİĞİNDE YAPAY ZEKA UYGULAMALARI | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5157 | OTOMOTİV MÜHENDİSLİĞİNDE YAPISAL TASARIM VE OPTİMİZASYON | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5161 | MEKANİK SİTEMLERİN BİLGİSAYAR DESTEKLİ ANALİZİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5163 | İLERİ TAŞIT TEKNOLOJİLERİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5167 | OTOMOTİV MÜHENDİSLİĞİNDE MALZEME SEÇİMİ | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| OTO5169 | MEKANİK TİTREŞİMLERDE TEORİK VE DENEYSEL YÖNTEMLER | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  |  |  |  |
| **Toplam Kredi/AKTS** | | | | | | | | **12** | **30** |  | | | | | |  |  |
| **TOPLAM KREDİ: 36 - TOPLAM AKTS:90** | | | | | | | | | | | | | | | | | | |
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|  | | | **BURSA ULUDAĞ UNIVERSITY**  **GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**  **2022-2023** **ACADEMIC YEAR COURSE PLAN** | | | | | | | | | | | | | **FR 1.1.1\_02** | | | |
| **DEPARTMENT OF** | | | | AUTOMOTİVE ENGİNEERİNG | | | | | | | | | | | | | | | |
| **DEPARTMENT / PROGRAM** | | | | Automotive Engineering / Master's Degree Program(WithoutThesis) | | | | | | | | | | | | | | | |
| **COURSE STAGE** | **I. TERM / FALL** | | | | | | | | | | **II. TERM / SPRING** | | | | | | | | |
| **Code** | **Course Title** | | | **Type** | **T** | **U** | **L** | **Credit** | **ECTS** | **Code** | **Course Title** | **Type** | **T** | **U** | | **L** | **Credit** | **ECTS** |
| OTO5119 | AUTOMOTIVE TRANSMISSION DESIGN | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5120 | PRODUCTION AND ASSEMBLY TECHNOLOGIES | Z | 3 | 0 | | 0 | 3 | 7,5 |
| OTO5159 | SYSTEM MODELING AND SIMULATION | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5162 | ADVANCED VEHICLE DYNAMICS | Z | 3 | 0 | | 0 | 3 | 7,5 |
| OTO5165 | VEHICLE DESIGN PRINCIPLES | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5102 | OTOMOTİV MÜHENDİSLİĞİNDE NUMERİK ANALİZ VE OPTİMİZASYON YÖNTEMLERİ | Z | 3 | 0 | | 0 | 3 | 7,5 |
| OTO5123 | ELECTRIC AND ELECTRONIC SYSTEMS FOR VEHICLES | | | Z | 3 | 0 | 0 | 3 | 7,5 | OTO5114 | ALTERNATIVE PROPULSION SYSTEMS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5124 | ENGINE DESIGN AND CONTROL FUNDAMENTALS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5128 | FINITE ELEMENT APPLICATIONS IN AUTOMOTIVE ENGINEERING | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5130 | VEHICLE INTERIOR DESIGN | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5134 | AERODYNAMIC MODELLING FUNDAMENTALS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5136 | ADVANCED TOPICS IN INTERNAL COMBUSTION ENGINES | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5140 | ADVANCED MANUFACTURING TECHNIQUES FOR VEHICLES | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5142 | INTERFACE CIRCUITS IN AUTOMOTIVE ELECTRONICS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5144 | EMBEDDED CONTROL SYSTEMS IN VEHICLES | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5146 | INTERNAL COMBUSTION ENGINE TESTS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5148 | TRIBOLOGICAL SYSTEMS IN AUTOMOTIVE | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5150 | FLUID CONTROL SYSTEMS AND APPLICATION IN VEHICLES | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5152 | VEHICLE SUSPENSION SYSTEMS DESIGN | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5154 | COMPUTER AIDED SIMULATION IN AUTOMOTİVE ENGİNEERİNG | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5156 | SPECIAL TOPICS IN VEHICLE DESIGN AND MANUFACTURING | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5158 | RELIABILITY BASED DESIGN | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5160 | VEHICLE OUT EMISSIONS AND THEIR CONTROL | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5164 | VEHICLE DISCRETE-TIME CONTROL SYSTEMS | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5166 | DESIGN PRINCIPLES OF HYBRID AND ELECTRIC VEHICLES | S | 3 | 0 | | 0 | 3 | 7,5 |
|  |  | | |  |  |  |  |  |  | OTO5168 | ADDITIVE MANUFACTURING TECHNOLOGIES | S | 3 | 0 | | 0 | 3 | 7,5 |
| **Total Credits/ECTS** | | | | | | | | **12** | **30** | **Total Credits/ECTS** | | | | | | | **12** | **30** |
| **STAGE THESIS** | **III. TERM / FALL** | | | | | | | | | |  | | | | | | | | |
| OTO5101 | PROJECT | | | Z | 0 | 1 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5121 | DEVELOPING FORMS AND DESIGNING THE BODY WORK | | | Z | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5129 | MIXTURE FORMATION IN INTERNAL COMBUSTION ENGINES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5131 | INTERNAL COMBUSTION ENGINES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5133 | APPLICATION OF INTERNAL COMBUSTION ENGINES ON VEHICLE | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5135 | VIBRATION AND NOISE IN VEHICLES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5137 | FUNDAMENTALS OF FINITE ELEMENT ANALYSIS | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5141 | VEHICLE HVAC SYSTEMS AND THERMAL COMFORT | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5143 | SENSORS AND ACTUATORS IN VEHICLES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5145 | ON-BOARD DIAGNOSTIC SYSTEMS IN VEHICLES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5147 | MODELLING OF ENGINEERING SYSTEMS IN AUTOMOTIVE | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5149 | USE OF POLYMERS IN VEHICLES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5153 | ADVANCED STRENGTH OF MATERIALS | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5155 | APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN AUTOMOTIVE ENGINEERING | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5157 | STRUCTURAL DESIGN AND OPTIMIZATION IN AUTOMOTIVE ENGINEERING | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5161 | COMPUTER AIDED ANALYSIS OF MECHANICAL SYSTEM | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5163 | ADVANCE VEHICLE TECHNOLOGIES | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5167 | MATERIAL SELECTION IN AUTOMOTIVE ENGINEERING | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| OTO5169 | THEORETICAL AND EXPERIMENTAL METHODS IN MECHANICAL VIBRATIONS | | | S | 3 | 0 | 0 | 3 | 7,5 |  |  |  |  |  | |  |  |  |
| **Total Credits/ECTS** | | | | | | | | **12** | **30** |  | | | | | | |  |  |
| **TOTAL CREDITS:36 - TOTAL ECTS:90** | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |