



**AFYON KOCATEPE UNIVERSITY**  
**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**  
**DEPARTMENT OF CIVIL ENGINEERING**



**MASTER (MSc) PROGRAM**

**FIRST YEAR**

| FIRST SEMESTER |                        |     |                |          |           |           |           |  |
|----------------|------------------------|-----|----------------|----------|-----------|-----------|-----------|--|
| COURSE CODE    | COURSE NAME            | C/E | COURSE CREDIT* |          |           |           |           |  |
|                |                        |     | TH             | AP       | TO        | CR        | EC        |  |
| INS-5501       | DIRECTED FIELD STUDIES | C   | 8              | 0        | 8         | 0         | 9         |  |
| INS-5601       | THESIS PREPARATION     | C   | 0              | 1        | 1         | 0         | 1         |  |
|                | ELECTIVE COURSE        | E   | 3              | 0        | 3         | 3         | 5         |  |
|                | ELECTIVE COURSE        | E   | 3              | 0        | 3         | 3         | 5         |  |
|                | ELECTIVE COURSE        | E   | 3              | 0        | 3         | 3         | 5         |  |
|                | ELECTIVE COURSE        | E   | 3              | 0        | 3         | 3         | 5         |  |
|                |                        |     |                |          |           |           |           |  |
| <b>TOTAL</b>   |                        |     | <b>20</b>      | <b>1</b> | <b>21</b> | <b>12</b> | <b>30</b> |  |

| SECOND SEMESTER |                         |     |                |          |           |          |           |  |
|-----------------|-------------------------|-----|----------------|----------|-----------|----------|-----------|--|
| COURSE CODE     | COURSE NAME             | C/E | COURSE CREDIT* |          |           |          |           |  |
|                 |                         |     | TH             | AP       | TO        | CR       | EC        |  |
| INS-5502        | DIRECTED FIELD STUDIES  | C   | 8              | 0        | 8         | 0        | 9         |  |
| INS-5602        | THESIS PREPARATION      | C   | 0              | 1        | 1         | 0        | 1         |  |
| INS-5701        | SEMINAR                 | C   | 0              | 2        | 2         | 0        | 5         |  |
| INS-5001        | ENGINEERING MATHEMATICS | C   | 3              | 0        | 3         | 3        | 5         |  |
|                 | ELECTIVE COURSE         | E   | 3              | 0        | 3         | 3        | 5         |  |
|                 | ELECTIVE COURSE         | E   | 3              | 0        | 3         | 3        | 5         |  |
|                 |                         |     |                |          |           |          |           |  |
| <b>TOTAL</b>    |                         |     | <b>17</b>      | <b>3</b> | <b>20</b> | <b>9</b> | <b>30</b> |  |



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**MASTER (MSc) PROGRAM**

**SECOND YEAR**

| THIRD SEMESTER |                        |     |                |          |          |          |           |  |
|----------------|------------------------|-----|----------------|----------|----------|----------|-----------|--|
| COURSE CODE    | COURSE NAME            | C/E | COURSE CREDIT* |          |          |          |           |  |
|                |                        |     | TH             | AP       | TO       | CR       | EC        |  |
| INS-5503       | DIRECTED FIELD STUDIES | C   | 8              | 0        | 8        | 0        | 9         |  |
| INS-5603       | THESIS                 | C   | 0              | 1        | 1        | 0        | 21        |  |
| <b>TOTAL</b>   |                        |     | <b>8</b>       | <b>1</b> | <b>9</b> | <b>0</b> | <b>30</b> |  |

| FOURTH SEMESTER |                        |     |                |          |          |          |           |  |
|-----------------|------------------------|-----|----------------|----------|----------|----------|-----------|--|
| COURSE CODE     | COURSE NAME            | C/E | COURSE CREDIT* |          |          |          |           |  |
|                 |                        |     | TH             | AP       | TO       | CR       | EC        |  |
| INS-5504        | DIRECTED FIELD STUDIES | C   | 8              | 0        | 8        | 0        | 9         |  |
| INS-5604        | THESIS                 | C   | 0              | 1        | 1        | 0        | 21        |  |
| <b>TOTAL</b>    |                        |     | <b>8</b>       | <b>1</b> | <b>9</b> | <b>0</b> | <b>30</b> |  |



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**GRADUATE PROGRAMS**

**ELECTIVE COURSES**

| COURSE CODE | COURSE NAME   | C/E | COURSE CREDIT* |    |    |    |    |
|-------------|---|-----|----------------|----|----|----|----|
|             |   |     | TH             | AP | TO | CR | EC |
| FBE-5001    | SCIENTIFIC RESEARCH AND METHODS                         | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5002    | ADVANCED CONCRETE TECHNOLOGY                            | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5003    | COMPOSITE MATERIALS IN CONSTRUCTION                     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5004    | DURABILITY OF REINFORCED CONCRETE STRUCTURES            | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5005    | METALLIC BUILDING MATERIALS                             | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5006    | EARTHQUAKE ENGINEERING                                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5007    | PRESTRESSED CONCRETE STRUCTURES                         | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5008    | TERMS OF SEISMIC EVALUATION OF EXISTING STRUCTURES      | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5009    | HUMAN FACTOR IN PRODUCTION                              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5010    | BITUMINOUS MIXTURES                                     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5011    | LOW VOLUME ROADS  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5012    | PAVEMENT MANAGEMENT                                     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5013    | ROAD ENGINEERING AND APPLICATIONS OF GEOTECHNICAL       | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5014    | USE OF INDUSTRIAL WASTE CONCRETE                        | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5015    | BINDING MATERIALS                                       | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5016    | BUILDINGS ENERGY CONSERVATION                           | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5017    | INTERNAL STRUCTURE AND PROPERTIES OF BUILDING MATERIALS | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5018    | ECOLOGICAL MATERIALS                                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5019    | ADVANCED BUILDING PHYSICS                               | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5020    | ADVANCED FLUID MECHANICS                                | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5021    | FLOOD CONTROL   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5022    | ENGINEERING PROPERTIES OF SOİLS                         | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5023    | EXPERIMENTAL SOIL MECHANICS                             | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5024    | SOIL IMPROVEMENT  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5025    | FOUNDATION ENGINEERING                                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5026    | THEORY OF ELASTICITY                                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5027    | DATA ANALYSIS   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5028    | SYSTEM ANALYSIS   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5029    | CONCRETE ROADS AND DESIGN PRINCIPLES                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5030    | TRAFFIC ENGINEERING AND APPLICATIONS                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5031    | TRANSPORTATION PLANNING                                 | E   | 3              | 0  | 3  | 3  | 5  |



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**GRADUATE PROGRAMS**

**ELECTIVE COURSES**

| COURSE CODE | COURSE NAME   | C/E | COURSE CREDIT* |    |    |    |    |
|-------------|---|-----|----------------|----|----|----|----|
|             |   |     | TH             | AP | TO | CR | EC |
| INS-5032    | CONCRETE ADDITIVES  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5033    | REINFORCEMENT CORROSION IN REINFORCED CONCRETE STRUCTURES | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5034    | CUSTOM DESIGN OF CONCRETE AND DURABILITY                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5035    | HIGHWAY SAFETY DESIGN PRINCIPLES                          | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5036    | ENVIRONMENTAL IMPACTS OF TRANSPORT                        | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5037    | PREVENTIVE MAINTENANCE ASPHALT PAVEMENTS                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5038    | RAIL SYSTEMS  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5039    | IMAGE PROCESSING ENGINEERING                              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5040    | REINFORCED CONCRETE CARRYING CAPACITY ANALYSIS METHODS    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5041    | EARTHQUAKE RESISTANT DESIGN                               | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5042    | STRUCTURAL DAMAGES AND SOLUTIONS                          | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5043    | ADVANCED STRUCTURAL ANALYSIS                              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5044    | ORGANIZATION OF REINFORCED CONCRETE STRUCTURAL SYSTEMS    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5045    | USE OF REINFORCED CONCRETE AND STEEL BUILDING PROGRAM     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5046    | INSULATION APPLICATION                                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5047    | CONSTRUCTION WASTE RECYCLING                              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5048    | CONSTRUCTION RAW MATERIALS                                | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5049    | HYDRODYNAMIC  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5050    | VISCOELASTICITY   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5051    | FRACTURE STRAIN RELATIONS                                 | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5052    | STOCHASTIC HYDROLOGY                                      | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5053    | EXPERIMENT DESIGN AND ANALYSIS                            | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5054    | CONCRETE BEHAVIOR   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5055    | GROUNDWATER HYDRAULICS                                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5056    | HYDRAULIC DESIGN OF DAMS                                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5057    | EXPERIMENT DESIGN AND ANALYSIS                            | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5058    | CONCRETE BEHAVIOR   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5059    | GEOMETRICAL DESIGN OF RAILWAYS                            | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5060    | GEOMETRICAL DESIGN OF HIGHWAYS                            | E   | 3              | 0  | 3  | 3  | 5  |



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|-------------|---|-----|----------------|----|----|----|----|
|             |   |     | TH             | AP | TO | CR | EC |
| INS-5061    | SUSTAINABILITY IN TRANSPORTATION SYSTEM                               | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5062    | PAVEMENT DESIGN   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5063    | FIRE RESISTANCE OF STRUCTURES   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5064    | DESIGN OF TIMBER STRUCTURES ACCORDING TO EUROCODE 5                   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5065    | QUALITY CONTROL SYSTEMS AND CE CODE IN CIVIL ENGINEERING              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5066    | ELASTIC STABILITY THEORY  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5067    | RISK ANALYSIS WITH THE OCCUPATIONAL SAFETY AND HEALTH IN CONSTRUCTION | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5068    | ADVANCED STRENGTH OF STRUCTURES                                       | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5069    | TRADITIONAL BUILDING MATERIALS  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5070    | COMPUTER AIDED MODELING OF GROUNDWATER                                | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5071    | ARTIFICIAL NEURAL NETWORKS AND CIVIL ENGINEERING APPLICATIONS         | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5072    | FLOOD HYDROLOGY   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5073    | DROUGHT HYDROLOGY   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5074    | POLYMER MATERIALS IN CONSTRUCTION                                     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5075    | THEORY OF PLATES  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5076    | THEORY OF SHELL   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5077    | PLASTIC ANALYSIS OF STRUCTURES  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5078    | FIBER CEMENT-BASED COMPOSITES   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5079    | FINITE ELEMENT METHOD   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5080    | LIGHTWEIGHT CONCRETE TECHNOLOGY                                       | E   | 3              | 0  | 3  | 3  | 5  |
| INS-5081    | FUZZY LOGIC AND CIVIL ENGINEERING APPLICATIONS                        | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6001    | COMPOSITE MATERIALS IN CONSTRUCTION                                   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6002    | EARTHQUAKE ENGINEERING  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6003    | PRESTRESSED CONCRETE STRUCTURES                                       | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6004    | HOT BITUMINOUS MIXTURES   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6005    | ROAD PAVEMENT ENGINEERING AND PERFORMANCE                             | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6006    | BUILDINGS ENERGY CONSERVATION   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6007    | ECOLOGICAL MATERIALS  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6008    | ADVANCED BUILDING PHYSICS   | E   | 3              | 0  | 3  | 3  | 5  |



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**GRADUATE PROGRAMS**

**ELECTIVE COURSES**

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|-------------|---|-----|----------------|----|----|----|----|
|             |   |     | TH             | AP | TO | CR | EC |
| INS-6009    | FLOOD CONTROL   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6010    | SOIL IMPROVEMENT  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6011    | THEORY OF ELASTICITY                                      | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6012    | TRAFFIC ENGINEERING AND APPLICATIONS                      | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6013    | TRANSPORTATION PLANNING                                   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6014    | REINFORCEMENT CORROSION IN REINFORCED CONCRETE STRUCTURES | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6015    | PREVENTIVE MAINTENANCE ASPHALT PAVEMENTS                  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6016    | RAIL SYSTEMS  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6017    | ADVANCED STRUCTURAL ANALYSIS                              | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6018    | USE OF REINFORCED CONCRETE AND STEEL BUILDING PROGRAM     | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6019    | HYDRODYNAMIC  | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6020    | VISCOELASTICITY   | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6021    | FRACTURE STRAIN RELATIONS                                 | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6022    | STOCHASTIC HYDROLOGY                                      | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6023    | COMPUTER DATA ANALYSIS                                    | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6024    | ENERGY EFFICIENT BUILDING SYSTEMS                         | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6025    | HEAT INSULATION MATERIALS                                 | E   | 3              | 0  | 3  | 3  | 5  |
| INS-6026    | ADVANCED STRUCTURAL DYNAMICS                              | E   | 3              | 0  | 3  | 3  | 5  |
| EGT-6001    | DEVELOPMENT AND LEARNING                                  | E   | 3              | 0  | 3  | 3  | 5  |
| EGT-6002    | INSTRUCTIONAL PLANNING AND EVALUATION                     | E   | 3              | 0  | 3  | 3  | 5  |