

| Civil Engineering (Major) |                |                                                             |                                                       |      |               |                   |           |                                             |                |                       |
|---------------------------|----------------|-------------------------------------------------------------|-------------------------------------------------------|------|---------------|-------------------|-----------|---------------------------------------------|----------------|-----------------------|
| Semester                  | Code           | Title                                                       | Prerequisites                                         | ECTS | Contact Hours | Independent Hours | Status    | Instructor                                  | EQE Module     | ABET Module           |
| 1                         | GE100          | Georgian for Academic Purposes: Academic Skills and Writing | No Prerequisite                                       | 6    | 34            | 116               | Mandatory | Maia Rogava                                 | Free Component | General Education     |
| 1                         | CS50           | Introduction to Programming                                 | No Prerequisite                                       | 6    | 80            | 70                | Mandatory |                                             | Major          | General Education     |
| 1                         | Q185/R576/P434 | English Language Course / Practical Course of German        |                                                       | 6    | 50            | 100               | Mandatory | Maia Rogava                                 | Free Component | General Education     |
| 1                         | MATH150        | Calculus I                                                  | No Prerequisite                                       | 6    | 62            | 88                | Mandatory | Mariam Manjikashvili/Mariam Mikelashvili    | Free Component | Math & Basic Sciences |
| 1                         | CHEM100        | Introduction to General Chemistry (Including Lab)           | No Prerequisite                                       | 8    | 62            | 138               | Mandatory | Ketevan Kupatadze                           | Free Component | Math & Basic Sciences |
| 1                         | CIVE100        | Introduction to Civil Engineering                           | No Prerequisite                                       | 2    | 17            | 33                | Mandatory | Vakhtang Balavadze                          | Major          | Engineering           |
| 2                         | GE102          | Introduction to Modern Thought I                            | No Prerequisite                                       | 6    | 31            | 119               | Mandatory | Tamar Tolordava                             | Free Component | General Education     |
| 2                         | Q955/S058/P736 | English Language Course / Practical Course of German        | Practical Course of Foreign language I                | 6    | 50            | 100               | Mandatory | Maia Rogava                                 | Free Component | General Education     |
| 2                         | MATH151        | Calculus II                                                 | MATH150                                               | 6    | 62            | 88                | Mandatory | Mariam Manjikashvili/Mariam Mikelashvili    | Free Component | Math & Basic Sciences |
| 2                         | PHYS195        | Basics of Physics I (Including Lab)                         | MATH150                                               | 8    | 77            | 123               | Mandatory | Giorgi Dalakishvili                         | Free Component | Math & Basic Sciences |
| 2                         | CIVE121        | Computer Graphics for the Built Environment                 | No Prerequisite                                       | 6    | 62            | 88                | Mandatory | Koba Surmava                                | Major          | Engineering           |
| 3                         | BIOL100        | Biology for Engineers                                       | No Prerequisite                                       | 6    |               | 150               | Mandatory | Natalia Kiknadze                            | Free Component | Math & Basic Sciences |
| 3                         | PHYS196        | Basics of Physics II                                        | PYS195                                                | 6    | 47            | 103               | Mandatory | Giorgi Dalakishvili                         | Free Component | Math & Basic Sciences |
| 3                         | MATH252        | Calculus III                                                | MATH151                                               | 6    | 62            | 88                | Mandatory | Mariam Manjikashvili/Mariam Mikelashvili    | Free Component | Math & Basic Sciences |
| 3                         | CIVE218        | Surveying for Civil Engineering and Construction            | MATH151                                               | 6    | 47            | 103               | Mandatory | Giorgi Kirkitadze                           | Major          | Engineering           |
| 3                         | ME101          | Applied Mechanics I (Statics)                               | PYS195, MATH151                                       | 6    | 47            | 103               | Mandatory | Lali Kajaia                                 | Major          | Engineering           |
| 3                         | GE/LAN 300     | English Language Course / Practical Course of German        | GE/LAN 200                                            | 6    | 52            | 98                | Mandatory | Maia Rogava                                 | Free Component | General Education     |
| 4                         | AE280          | Numerical Analysis                                          | MATH151                                               | 6    | 47            | 103               | Mandatory | Avtandil Tavkhelidze                        | Major          | Math & Basic Sciences |
| 4                         | STAT250        | Probability and Statistics                                  | MATH252                                               | 6    | 45            | 105               | Mandatory | Nato Jorjashvili                            | Major          | Math & Basic Sciences |
| 4                         | ME201          | Applied Mechanics II (Dynamics)                             | ME101                                                 | 6    | 47            | 103               | Mandatory | Lali Kajaia                                 | Major          | Engineering           |
| 4                         | CIVE301        | Introduction to Solid Mechanics (Including Lab)             | ME101                                                 | 8    | 77            | 123               | Mandatory | Lali Kajaia                                 | Major          | Engineering           |
| 4                         | GE/LAN 400     | English Language Course / Practical Course of German        | GE/LAN 300                                            | 6    | 52            | 98                | Mandatory | Maia Rogava                                 | Free Component | General Education     |
| 5                         | ME 240         | Introduction to Engineering Materials                       | CHEM100, ME101                                        | 6    | 47            | 103               | Mandatory | Avtandil Tavkhelidze                        | Major          | Engineering           |
| 5                         | CIVE321        | Structural Analysis I                                       | CIVE301                                               | 6    | 47            | 103               | Mandatory | Konstantine Chkhikvadze                     | Major          | Engineering           |
| 5                         | ME340          | Fluid Mechanics                                             | MATH151, ME201                                        | 6    | 47            | 103               | Mandatory | Temur Stephania                             | Major          | Engineering           |
| 5                         |                | Elective - Natural Science                                  |                                                       | 8    |               |                   | Elective  |                                             | Major          | Math & Basic Sciences |
| 5                         | CONE330        | Principles of Engineering Economy                           | MATH151, STAT250                                      | 6    | 47            | 103               | Mandatory | Vakhtang Balavadze                          | Major          | Engineering           |
| 5                         |                | Elective - Business Administration                          | No Prerequisite                                       | 6    |               |                   | Elective  |                                             | Free Component | General Education     |
| 6                         |                | Elective - 1                                                |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 6                         | CIVE220        | Civil Engineering Computer Applications                     | CIVE321                                               | 6    | 47            | 103               | Mandatory | Konstantine Chkhikvadze/Davit Pirkulashvili | Major          | Engineering           |
| 6                         | CIVE444        | Applied Hydraulics (Including lab)                          | AE340                                                 | 8    | 77            | 123               | Mandatory | Temur Stephania                             | Major          | Engineering           |
| 6                         | CIVE481        | Introduction to Transportation Engineering                  | CIVE218, CIVE121                                      | 6    | 47            | 103               | Mandatory | Vakhtang Jghamaia                           | Major          | Engineering           |
| 6                         | ENVE355        | Environmental Engineering                                   | CHEM100, BIOL100                                      | 6    | 48            | 102               | Mandatory | Luiza Bubashvili                            | Major          | Engineering           |
| 7                         | CIVE421        | Reinforced Concrete Design                                  | CIVE321                                               | 6    | 47            | 103               | Mandatory | Davit Pirkulashvili                         | Major          | Engineering           |
| 7                         | CIVE462        | Geotechnical Engineering (Including lab)                    | CIVE301                                               | 8    | 92            | 108               | Mandatory | Irakli Urushadze                            | Major          | Engineering           |
| 7                         |                | Elective 2                                                  |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 7                         |                | Elective 3                                                  |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 8                         | CIVE495        | Senior Design Project                                       | CIVE321, CIVE444, CIVE462, CIVE481, ENVE355, CONE 330 | 6    | 35            | 115               | Mandatory |                                             | Major          | Engineering           |
| 8                         |                | Elective - 4                                                |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 8                         |                | Elective - 5                                                |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 8                         |                | Elective - 6                                                |                                                       | 6    |               |                   | Elective  |                                             | Major          | Engineering           |
| 8                         | CIVE401        | Civil Engineering and Society                               | No Prerequisite                                       | 2    | 17            | 33                | Mandatory | Vakhtang Balavadze                          | Major          | Engineering           |
| Elective - Major          |                |                                                             |                                                       |      |               |                   |           |                                             |                |                       |
| Structural engineering    |                |                                                             |                                                       |      |               |                   |           |                                             |                |                       |
|                           | CIVE521        | Structural Analysis II                                      | CIVE321                                               | 6    | 47            | 103               | Elective  | Konstantine Chkhikvadze                     | Major          | Engineering           |
|                           | CIVE525        | Design of Steel Structures                                  | CIVE321                                               | 6    | 47            | 103               | Elective  | Nino Tabatadze                              | Major          | Engineering           |
|                           | CIVE528        | Masonry Structure Design                                    | CIVE321                                               | 6    |               | 150               | Elective  | Nino Tabatadze                              | Major          | Engineering           |
|                           | CIVE529        | Design of Wood Structures                                   | CIVE321                                               | 6    |               | 150               | Elective  | Nino Tabatadze                              | Major          | Engineering           |

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|-------------------------------------------------------|---------|----------------------------------------------------------------------|------------------|---|----|-----|----------|----------------------------------|----------------|-----------------------|
|                                                       | CIVE530 | Bridge Engineering                                                   | CIVE321          | 6 |    | 150 | Elective | Giorgi Misabishvili              | Major          | Engineering           |
| <b>Selective Elective in Geotechnical Engineering</b> |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | CIVE465 | Foundation Eng. And Earth Retaining Structures                       | CIVE462          | 6 | 47 | 103 | Elective | Igor Timchenko                   | Major          | Engineering           |
|                                                       | CIVE466 | Soil Mechanics and Foundations                                       | CIVE462          | 6 |    | 150 | Elective | Levan Navrozashvili              | Major          | Engineering           |
| <b>Transportation engineering</b>                     |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | CIVE482 | Highway Engineering                                                  | CIVE481          | 6 | 47 | 103 | Elective | Vakhtang Jghamaia                | Major          | Engineering           |
|                                                       | CIVE580 | Traffic Engineering Design                                           | CIVE481          | 6 | 47 | 103 | Elective | Vakhtang Jghamaia                | Major          | Engineering           |
| <b>Water resources engineering</b>                    |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | CIVE445 | Applied Hydrology                                                    | CIVE444          | 6 | 62 | 88  | Elective | Nika Tsitelashvili               | Major          | Engineering           |
|                                                       | CIVE446 | Hydraulic Structures                                                 | CIVE444          | 6 |    | 150 | Elective | Temur Stephania                  | Major          | Engineering           |
| <b>Technology and Environmental Engineering</b>       |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | EN441   | Water Treatment Engineering (incl. Wastewater)                       | ENV355, CIVE444  | 6 | 47 | 103 | Elective | Elina Bakradze                   | Major          | Engineering           |
|                                                       | DE120   | Introduction to Energy Systems and Technologies                      | No Prerequisite  | 6 | 48 | 102 | Elective | Murman Margvelashvili            | Major          | Engineering           |
|                                                       | DE117   | Systems, Sustainability, and Climate change - Introduction           | No Prerequisite  | 6 | 48 | 102 | Elective | Murman Margvelashvili            | Major          | Engineering           |
|                                                       | UNI007  | Introduction to Artificial Intelligence                              | No Prerequisite  | 6 | 48 | 102 | Elective | Paata Gogishvili/Erekle Magradze | Major          | Engineering           |
| <b>Construction engineering</b>                       |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | CIVE403 | Applied Drone Photogrammetry for Architectural Surveying and Mapping | No Prerequisite  | 6 | 48 | 102 | Elective | Giorgi Kirkitadze                | Major          | Engineering           |
|                                                       | CONE401 | Construction Planning and Scheduling                                 | CIVE321, STAT250 | 6 | 77 | 73  | Elective | Vakhtang Balavadze               | Major          | Engineering           |
| <b>Elective - Natural Science</b>                     |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       | ECOL100 | Ecology - ecosystem                                                  | No Prerequisite  | 8 | 48 | 102 | Elective | Archil Magalashvili              | Free Component | Math & Basic Sciences |
|                                                       | GEOL100 | Geology                                                              | No Prerequisite  | 8 | 48 | 102 | Elective | Archil Magalashvili              | Free Component | Math & Basic Sciences |
|                                                       | CHEM200 | General Chemistry II                                                 | CHEM100          | 8 | 62 | 88  | Elective | Ketevan Kupatadze                | Free Component | Math & Basic Sciences |
| <b>Elective - General Education</b>                   |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
| <b>Business Administration</b>                        |         |                                                                      |                  |   |    |     |          |                                  |                |                       |
|                                                       |         | Business Communications                                              | No Prerequisite  | 6 | 32 | 118 | Elective |                                  | Free Component | General Education     |
|                                                       |         | Essentials of Management                                             | No Prerequisite  | 6 | 32 | 118 | Elective |                                  | Free Component | General Education     |
|                                                       |         | Introduction to Marketing                                            | No Prerequisite  | 6 | 32 | 118 | Elective |                                  | Free Component | General Education     |
|                                                       |         | Basics of Business                                                   | No Prerequisite  | 6 | 32 | 118 | Elective |                                  | Free Component | General Education     |
|                                                       |         | Basics of Entrepreneurship                                           | No Prerequisite  | 6 | 32 | 118 | Elective |                                  | Free Component | General Education     |