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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------|
|  | <div>The International University of Beirut<br/>الجامعة الدولية في بيروت</div> | <div>Major Title: Bachelor of Engineering in Electrical Engineering<br/>Major Code: BEEENG<br/>Level: underGraduate<br/>Number Of Credits: 150<br/>Date: 10-08-2022</div> |                                         |                  |
| Bachelor of Engineering in Electrical Engineering (BEEENG)                        |                                                                                |                                                                                                                                                                           |                                         |                  |
| First Year                                                                        |                                                                                |                                                                                                                                                                           |                                         |                  |
| Fall Semester                                                                     |                                                                                |                                                                                                                                                                           |                                         |                  |
| Code                                                                              | Title                                                                          | Credits                                                                                                                                                                   | Prerequisites                           | Corequisites     |
| ENGL201                                                                           | Composition and Research Skills                                                | 3                                                                                                                                                                         | ENGL151                                 |                  |
| MATH225                                                                           | Linear Algebra with Applications                                               | 3                                                                                                                                                                         | ENGL051-MATH161                         |                  |
| MATH210                                                                           | Calculus II                                                                    | 3                                                                                                                                                                         | MATH161-MATH160                         |                  |
| MENG225                                                                           | Engineering Drawing & CAD                                                      | 3                                                                                                                                                                         |                                         |                  |
| PHYS220                                                                           | Physics for Engineers                                                          | 3                                                                                                                                                                         | PHYS161-ENGL101-PHYS160                 | MATH210          |
| Total                                                                             |                                                                                | 15                                                                                                                                                                        |                                         |                  |
| Spring Semester                                                                   |                                                                                |                                                                                                                                                                           |                                         |                  |
| Code                                                                              | Title                                                                          | Credits                                                                                                                                                                   | Prerequisites                           | Corequisites     |
| ENGG200                                                                           | Introduction to Engineering                                                    | 3                                                                                                                                                                         | MATH160-CHEM160                         |                  |
| CENG250                                                                           | Digital Logic I                                                                | 3                                                                                                                                                                         |                                         | EENG250          |
| MATH270                                                                           | Ordinary Differential Equations                                                | 3                                                                                                                                                                         | MATH210                                 | MATH225          |
| EENG250                                                                           | Electric Circuits I                                                            | 3                                                                                                                                                                         | PHYS161-PHYS160-MATH161-MATH160-ENGL051 | ENGG200-MATH210  |
| CSCI250L                                                                          | Introduction to Programming Lab                                                | 1                                                                                                                                                                         |                                         | ENGL101-CSCI250  |
| CSCI250                                                                           | Introduction to Programming                                                    | 3                                                                                                                                                                         |                                         | ENGL101-CSCI250L |
| Total                                                                             |                                                                                | 16                                                                                                                                                                        |                                         |                  |
| Summer Semester                                                                   |                                                                                |                                                                                                                                                                           |                                         |                  |
| Code                                                                              | Title                                                                          | Credits                                                                                                                                                                   | Prerequisites                           | Corequisites     |
| ENGL251                                                                           | Communication Skills                                                           | 3                                                                                                                                                                         | ENGL201                                 |                  |
| CULT200                                                                           | Introduction to Arab - Islamic Civilization                                    | 3                                                                                                                                                                         |                                         |                  |
| Total                                                                             |                                                                                | 6                                                                                                                                                                         |                                         |                  |
| Second Year                                                                       |                                                                                |                                                                                                                                                                           |                                         |                  |
| Fall Semester                                                                     |                                                                                |                                                                                                                                                                           |                                         |                  |
| Code                                                                              | Title                                                                          | Credits                                                                                                                                                                   | Prerequisites                           | Corequisites     |
| MATH310                                                                           | Probability & Statistics for Scientists & Engineers                            | 3                                                                                                                                                                         | MATH210-ENGL201                         |                  |
| MATH220                                                                           | Calculus III                                                                   | 3                                                                                                                                                                         | MATH210                                 |                  |
| ENGG300                                                                           | Engineering Economics                                                          | 3                                                                                                                                                                         | ENGL201-MATH225-MATH220                 |                  |
| EENG301L                                                                          | Electric Circuits Lab                                                          | 1                                                                                                                                                                         | EENG250                                 | EENG300          |

|         |                      |    |                                             |          |
|---------|----------------------|----|---------------------------------------------|----------|
| EENG300 | Electric Circuits II | 3  | EENG250                                     | EENG301L |
| MENG250 | Statics              | 3  | MATH161-MATH160-PHYS161-<br>PHYS160-ENGL051 | MATH210  |
| Total   |                      | 16 |                                             |          |

### Spring Semester

| Code     | Title                                | Credits | Prerequisites                   | Corequisites    |
|----------|--------------------------------------|---------|---------------------------------|-----------------|
| EENG388  | Electromagnetic Fields and Waves     | 3       | MATH270-PHYS220-MATH220-EENG300 |                 |
| EENG385  | Signals and Systems                  | 3       | MATH225-EENG300                 | MATH310-MATH270 |
| EENG360  | Introduction to Power Systems        | 3       | MATH225-MATH210-EENG300         | ENGL251         |
| EENG350L | Electronic Circuits I Lab            | 1       | EENG300-EENG250-EENG301L        | EENG350         |
| EENG350  | Electronic Circuits I                | 3       | ENGG200-CENG250-EENG300-EENG250 | EENG350L        |
| CENG380  | Microprocessors and Microcontrollers | 3       | CENG250-EENG250-CSCI250         | CENG352L        |
| CENG352L | Digital Logic Circuits Lab           | 1       | CENG250-EENG301L                |                 |
| Total    |                                      | 17      |                                 |                 |

### Summer Semester

| Code  | Title                       | Credits | Prerequisites | Corequisites |
|-------|-----------------------------|---------|---------------|--------------|
|       | General Education Electives | 3       |               |              |
|       | General Education Electives | 3       |               |              |
| Total |                             | 6       |               |              |

## Third Year

### Fall Semester

| Code     | Title                            | Credits | Prerequisites                                           | Corequisites |
|----------|----------------------------------|---------|---------------------------------------------------------|--------------|
| EENG440  | Electric Machines I              | 3       | EENG300-EENG388-EENG360                                 |              |
| EENG435L | Control Systems Lab              | 1       | MATH310-EENG385                                         | EENG435      |
| EENG435  | Control Systems                  | 3       | PHYS220-MENG250-MATH270-MATH225-MATH310-EENG300-EENG385 | EENG435L     |
| EENG410L | Power Electronics I Lab          | 1       | EENG350                                                 | EENG410      |
| EENG410  | Power Electronics I              | 3       | EENG300-ENGL251-EENG350L-EENG350                        | EENG410L     |
| EENG400L | Electronic Circuits II Lab       | 1       | EENG350                                                 | EENG400      |
| EENG400  | Electronic Circuits II           | 3       | EENG350                                                 | EENG400L     |
| CENG400L | Microcontroller Applications Lab | 1       | CENG380                                                 |              |
| Total    |                                  | 16      |                                                         |              |

### Spring Semester

| Code     | Title                                        | Credits | Prerequisites | Corequisites |
|----------|----------------------------------------------|---------|---------------|--------------|
| ARAB200  | Arabic Language and Literature               | 3       |               |              |
|          | Major Elective                               | 3       |               |              |
| ENGG450  | Engineering Ethics and Professional Practice | 3       | ENGL251       | ENGG300      |
| EENG491L | Electric Machines II Lab                     | 1       | EENG440       | EENG491      |
| EENG491  | Electric Machines II                         | 3       | EENG440       | EENG491L     |

|         |                                    |    |                 |  |
|---------|------------------------------------|----|-----------------|--|
| EENG465 | Electrical wiring and Installation | 3  | EENG300-EENG360 |  |
| Total   |                                    | 16 |                 |  |

### Summer Semester

| Code    | Title                | Credits | Prerequisites | Corequisites |
|---------|----------------------|---------|---------------|--------------|
| ENGG499 | Practical Experience | 4       |               |              |
| Total   |                      | 4       |               |              |

## Fourth Year

### Fall Semester

| Code     | Title                                         | Credits | Prerequisites                   | Corequisites |
|----------|-----------------------------------------------|---------|---------------------------------|--------------|
| EENG500L | Industrial Systems Automation and Control Lab | 1       |                                 | EENG500      |
| EENG511  | Power System Analysis and Design              | 3       | MATH270-EENG491                 |              |
| EENG515  | Introduction to renewable Energy              | 3       | EENG491-EENG400-EENG410         |              |
| EENG500  | Industrial Systems Automation and Control     | 3       | EENG300-CSCI250-CENG380-EENG435 | EENG500L     |
|          | Major Elective                                | 3       |                                 |              |
| EENG521  | Power Distribution Systems                    | 3       | EENG440-EENG360-EENG491         |              |
| Total    |                                               | 16      |                                 |              |

### Spring Semester

| Code     | Title                        | Credits | Prerequisites           | Corequisites    |
|----------|------------------------------|---------|-------------------------|-----------------|
|          | Major Elective               | 3       |                         |                 |
| EENG611  | Power Transmission Systems   | 3       | EENG561-EENG360         | EENG521-EENG511 |
| EENG565L | Power Electronics II Lab     | 1       | EENG521-EENG410         | EENG565         |
| EENG561  | Power Generation and Control | 3       | EENG435-EENG491-EENG511 |                 |
|          | Major Elective               | 3       |                         |                 |
| EENG565  | Power Electronics II         | 3       | EENG521-EENG410         | EENG565L        |
| Total    |                              | 16      |                         |                 |

### Summer Semester

| Code    | Title            | Credits | Prerequisites                                   | Corequisites |
|---------|------------------|---------|-------------------------------------------------|--------------|
| EENG595 | Capstone Project | 6       | EENG611-EENG565-EENG561-EENG515-EENG500-ENGL251 |              |
| Total   |                  | 6       |                                                 |              |

## Major Elective Courses

| Code    | Title                          | Credits | Prerequisites                   | Corequisites    |
|---------|--------------------------------|---------|---------------------------------|-----------------|
| CENG477 | Industrial Networks            | 3       | EENG440                         |                 |
| EENG451 | Measurements and Sensors       | 3       | EENG440                         |                 |
| EENG482 | Electrical Systems Simulation  | 3       | CSCI250-MATH310-EENG410-EENG440 | EENG435-EENG491 |
| EENG556 | Photovoltaic Energy Conversion | 3       | EENG491-EENG410-EENG515         |                 |
| EENG571 | Power System Modeling          | 3       | EENG360-MATH225-EENG511         |                 |
| EENG601 | Advanced Systems Automation    | 3       | EENG500                         |                 |
| EENG606 | Digital Control Systems        | 3       | EENG601                         |                 |

|         |                                          |   |                         |         |
|---------|------------------------------------------|---|-------------------------|---------|
| EENG621 | Power System Stability                   | 3 | EENG571                 |         |
| EENG622 | Photovoltaic Energy Systems              | 3 | EENG491-EENG410-EENG515 |         |
| EENG640 | Power System Protection & Switchgear     | 3 | EENG491-EENG511         |         |
| EENG651 | Linear State-Space Control Systems       | 3 | EENG601-EENG561-EENG435 |         |
| EENG655 | Electric Drives                          | 3 | EENG491-EENG565         | EENG611 |
| EENG656 | Fuzzy Logic, Systems, and Control        | 3 | EENG561-EENG435         |         |
| EENG665 | Power Plant Design & Construction        | 3 | EENG621                 | EENG561 |
| EENG666 | Wind Turbine Generating Systems          | 3 | EENG515                 | EENG565 |
| EENG670 | Smart Grid                               | 3 | EENG665                 |         |
| EENG683 | Special Topics in Electrical Engineering | 3 | EENG500-EENG491         | EENG611 |
| EENG686 | Economics of Renewable Energy            | 3 | ENGG300-EENG515-EENG622 |         |