

## Ashesi University College Graduation Requirements

| Mechanical Engineering Major - Class of 2019                     | Ashesi Credits | Course Code |
|--|----------------|-------------|
| Mandatory Courses (all required)                                 |                |             |
| Written and Oral Communication                                   | 1              | ENGL 112    |
| Text & Meaning   | 1              | ENGL113     |
| Foundations of Design and Entrepreneurship I                     | 1              | BUSA161_A   |
| Foundations of Design and Entrepreneurship II                    | 1              | BUSA161_B   |
| Microeconomics   | 1              | ECON101     |
| Social Theory  | 1              | SOAN121     |
| Leadership Seminar 1: What Makes a Good Leader?                  | 0.5            | SOAN111     |
| Leadership Seminar 2: Rights, Ethics, and Rule of Law            | 0.5            | SOAN211     |
| Leadership Seminar 3: The Economic Development of a Good Society | 0.5            | SOAN311     |
| Leadership Seminar 4 for Engineers: Leadership as Service        | 1              | SOAN411_A   |
| <b>Total</b>   | <b>8.5</b>     |             |

| Mandatory Africana Elective: Select one course from list                                     |          |             |
|--|----------|-------------|
| Africa in an International Setting: Pan-Africanism   | 1        | POLS231_202 |
| Africa in the International Setting  | 1        | POLS231_201 |
| Africa in the International Setting: A Survey of Africa's integration into the Global System | 1        | POLS231_203 |
| Africa in the International Setting: China in Africa   | 1        | POLS231_204 |
| Africa in the International Setting: Refugees and Forced Migration in Africa                 | 1        | POLS231_205 |
| African Literature   | 1        | ENG215      |
| Africa Music and Dance: Traditional and Contemporary Music                                   | 1        | SOAN233     |
| African Philosophical Thought  | 1        | POLS233     |
| African Repertory: Music and Dance   | 1        | SOAN231     |
| <b>Total</b>   | <b>1</b> |             |

|                                |            |  |
|--------------------------------|------------|--|
| <b>Total Mandatory Courses</b> | <b>9.5</b> |  |
|--------------------------------|------------|--|

| Required Technical Courses (Required of all Engineering Majors) |          |           |
|---|----------|-----------|
| Calculus 1  | 1        | MATH142_A |
| Calculus 2  | 1        | MATH142_B |
| Statistics for Engineering and Economics                        | 1        | MATH152   |
| Multivariable Calculus and Linear Algebra                       | 1        | MATH211   |
| Differential Equations and Numerical Methods                    | 1        | MATH 221  |
| Computer Programming for Engineering                            | 1        | CS112     |
| Physics I: Mechanics  | 1        | SC112     |
| Physics II: Electromagnetism                                    | 1        | SC113     |
| Materials Science & Chemistry                                   | 1        | SC221     |
| <b>Total</b>  | <b>9</b> |           |

|   |  |  |
|---|--|--|
| <b>ME Additional Required Major Courses</b> |  |  |
|---|--|--|

|  |             |         |
|--|-------------|---------|
| ENGR 112 Introduction to Engineering                             | 1           | ENGR112 |
| CE 122 Applied Programming for Engineers                         | 1/2         | CE122   |
| EE 222 Circuits and Electronics                                  | 1           | EE222   |
| ENGR 212 Instrumentation for Engineering                         | 1/2         | ENGR212 |
| EE 242 Introduction to Electrical Machines and Power Electronics | 1           | EE242   |
| ME 311 Mechanics of Materials/Structural Engineering             | 1           | ME311   |
| ENGR 311 System Dynamics   | 1           | ENGR311 |
| ENGR 312 Control Systems   | 1           | ENGR312 |
| CE 322 Digital Systems Design                                    | 1           | CE322   |
| ME 301 Mechanical Machine Design                                 | 1           | ME301   |
| ENGR 300 Third Year Group Project & Seminar                      | 1/2         | ENGR300 |
| ME 411 Fundamentals of Thermal Fluid Science and Heat Transfer   | 1           | ME411   |
| ME 421 Thermal Systems and Applications                          | 1           | ME421   |
| ENGR 400 Senior Project  | 1           | ENGR400 |
| ENGR 401 Senior Project & Seminar                                | 1           | ENGR401 |
| ENGR 413 Project Management and Professional Practice            | 1           | ENGR413 |
| <b>Total</b>   | <b>14.5</b> |         |

|   |          |         |
|---|----------|---------|
| <b>ME Required Major Electives: Select two courses from list</b>  |          |         |
| BUSA 304 Operations Management                                    | 1        | BUSA304 |
| BUSA 444 Supply Chain Management                                  | 1        | BUSA444 |
| ECON 321 Risk Management+   | 1        | ECON321 |
| ECON 341 Operations Research+                                     | 1        | ECON341 |
| ENGR 414 Introduction to Environmental Science and Engineering    | 1        | ENGR414 |
| CS 222 Data Structures and Algorithms                             | 1        | CS222   |
| CS 312 Intermediate Computer Programming                          | 1        | CS312   |
| CS 415 Software Engineering                                       | 1        | CS415   |
| CS 432 Networks and Distributed Computing                         | 1        | CS432   |
| CS 435 Operating Systems  | 1        | CS435   |
| CS 453 Robotics   | 1        | CS453   |
| EE 421 Digital and Analog Signal Processing in Telecommunications | 1        | EE421   |
| EE 451 Power Engineering  | 1        | EE451   |
| EE 453 Power Systems Analysis                                     | 1        | EE453   |
| ME 301 Mechanical Machine Design                                  | 1        | ME301   |
| ME 311 Mechanics of Materials / Structural Engineering            | 1        | ME311   |
| ME 421 Thermal Systems & Applications                             | 1        | ME421   |
| ME 431 Fluid Mechanics & Applications                             | 1        | ME431   |
| <b>Total</b>  | <b>2</b> |         |

|  |             |  |
|--|-------------|--|
| <b>ME Required Major Courses Total</b> | <b>25.5</b> |  |
|--|-------------|--|

|  |           |  |
|--|-----------|--|
| <b>ME Total Courses: Mandatory + Required + Elective</b> | <b>35</b> |  |
|--|-----------|--|