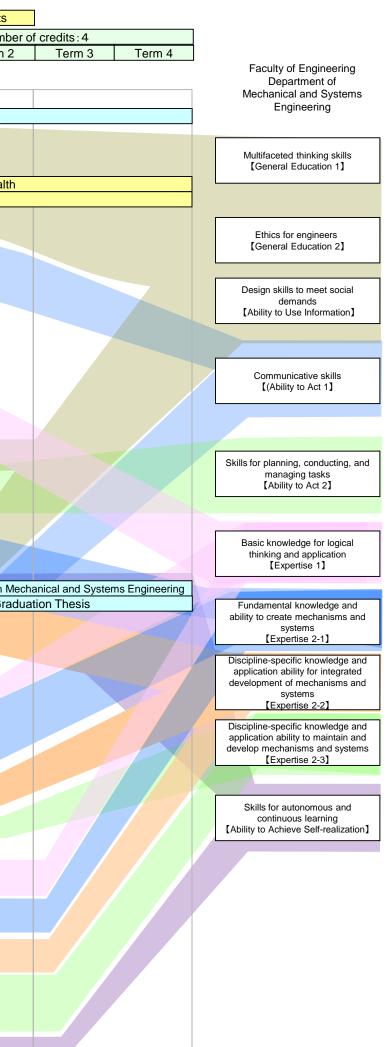
Curriculum map (Department of Mechanical and Systems Engineering)

| | | | | | | | | ip (Departr | | | 5 | | ed Subjects | Restricted | d Subjects | |
|-------|--|--|---|--|--|-------------------------------------|---------------------------------|-----------------------------|--|---|-----------------------------|--|--|----------------|------------|--|
| | | | Number o | of credits : 1 | | | Number o | of credits:2 | | | Number o | of credits: 3 | | Numbe | | |
| Clas | ssification | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | |
| | | Introduction of Mechanical and System Engineering | | | | | 101112 | 101110 | | | 101112 | | | | 1 101112 | |
| | | Introduction to Electrical and Communication Engineering Introduction to Information Technology |] | | | | | | | | | | | | | |
| | | Introduction to Information Technology Introduction to Chemistry and Bioengineering | | | | | | | | | | | | | | |
| | _ | ◎ All University Guidance I, I | | | | | | Develop | oing Intellectua | Understanding | g (Society, Life | , Nature) | | | | |
| | _ibe | Introduction to Information Processing 1 | Introduction to Information Processing 2 | | | | | | | | | | | | | |
| | Liberal Arts | | | | 1, English(Reading)-2 | © English(S&L) | -1 English(S&I)-2 | , English(R&W)-1, I | English(R&W/)-2 | | | | | | | |
| | Ar | © English(Writing) | -1, English(Writing)-2, | ,English(Listening)-1, | English(Listening)-2 | e English(G&E) | -1, Eligiisi (60E)-2 | | | | | | | | | |
| | 5 | | | Developing | n Intellectual Un | derstanding (Sc | ciety, Life, Na | ture), Courses t | or Developing | Practical Know | ledge and Sen | sitivity, Course | s for Developing | General Skills | and Healt | |
| | | | | 20101010 | <u>,</u> | | | d English, Adva | | | | | | | | |
| | | | | | | | , , , , , , , , , , | | , | © Engineering Ethics | | <u> </u> | | | | |
| | | | | | | | | | | | | | Technical Writing and Presentation | | | |
| | | | | Safety and Security | Managements for Engineer | 1 | | | | | | | and Procontation | | | |
| | Z | | | Galety and Security I | vianagements for Engineer | _ | | | | © Technical English | 1 | | | | | |
| | ajo | O Analysis 1 | © Analysis 2 | | | | | | | G Toolinioal Lingital | | | | | | |
| | , T | © Linear Algebra 1 | © Linear Algebra 2 | | | | | | | | | | | | | |
| | oun | Caboratory Work and Pra | actice on Basic Engineering | 1 | | | | | | | | | | | | |
| | idat | | | Basic Physics (Classical Mechanics) 1 | Basic Physics (Classical Mechanics) 2 | | | | | | | | | | | |
| | tion | | | Basic Physics (Electromagnetics) 1 | Basic Physics (Electromagnetics) 2 | | | | | | | | | | | |
| | Major Foundational Courses | | Basic Chemistry | | | | | | | | | | | | | |
| | Co | | | | Basic Biology 2 | | | | | | | | | | | |
| | JILS | | | Programming 1 | Programming 2 | | | | | | | | | | | |
| | S | | | Probability and Statistics | | 2 | | | | | | | | | | |
| | | | | Differential Equation | 1 Differential Equation 2 | | | | | | | | | | | |
| | | | | | | © Fourier and Laplace Transforms | Ovector and Complex Analyses | | 1 | @ Oursieur (or Masharian) | | @ Coming for Markaniant | 7 | | | |
| | | | | | | | Partial Differential | Industrial Mechanics | | Seminar for Mechanical and Systems Engineers I | | © Seminar for Mechanical and Systems Engineers II | | | | |
| | | | | | | Multiple Integrals | Equation | | | | | | | | | |
| | D | | | | | Mechanical Manufacturing | | | | | | | | | | |
| | epa | | | | | Mechanics of Materials I | | | | | Internship | | | | | |
| | Intr | | | | | Basic Mechanic | al System Drawing |] | Systems Control I | | Production Systems | | | | | |
| | len | | | | | Ø Manufactur | ing Practice I | Ø Manufactur | ing Practice II | Fundamentals of Vibration | | | | | | |
| | ŝ | | | | | | O Thermodynamics I | - | | © Fluid Mechanics I | | | | | | |
| | Department Major | | | | | | ©Electronic Circuits | | | | | | | | | |
| | • | | | | | | | | | | | | | Advanced E | | |
| | | | | | | | | | Mechanical Manufacturing Processing | 9 | Engineering Measurements | 1 | | | © Gra | |
| | | | | | | | | | | Basic Robotics | | | | | | |
| Major | | | | | | | | | | | | English for Mechanics | all @ English for Mechanical | | | |
| jor | | | | | | | | | | © Experimenta in | - | | al © English for Mechanical Engineering 2 | | | |
| | 07 | | | | | | | | | © Experiments in Mechanical Engineering | | © Experiments in M | lechanical Engineering | | | |
| | /lec | | | | | | | © Technical Project | with Creative Training | | | | Numerical Analysis | | | |
| | Mechanical Engineering Course Major | | | | | | | | - | | | O Fluid Mechanics I | | | | |
| | nic; Ma | | | | | | | O Mechanics of Materials II | O Thermodynamics I | | | | Engineering Plasticity | | | |
| | al E ajor | | | | | | | Wechanics of Materials I | O Mechanisms | 1 | | | Applied Materials | | | |
| | ng | | | | | | | O Materials Science | | | O Machine Desigr | | sign and Drawing | | | |
| | ine | | | | | | | and Engineering | | | | - | AD | | _ | |
| | erir | | | | | | | | | | O Nontraditional Machinin | 9 O Heat Transfer | Transport Phenomena | | | |
| | Ð | | | | | | | | | | | | of Latent Heat | | | |
| | | | | | | | | | | Energy Engineering | | | | | | |
| | | | | | | | | | | Linergy Engineering | | Practical English | Practical English | | | |
| | Ś | | | | | | | | | | | for Engineers I | for Engineers I |] | | |
| | Systems | | | | | | | System CAD | | | Operations Research I | Operations Research I | Operations Research II | | | |
| | em | | | | | | | | Digital Circuit | | Image Sensing | © Exercise on Systems Engineering | Intelligent Robot Management | | | |
| | | | | | | | | | | | Robot Mechanisms | Robot Dynamics | | | | |
| | Engineering | | | | | | | | | Practice on Systems Engineering I | | Interface Design | | | | |
| | ner | | | | | | | | | | Systems Control I | Fundamentals for Energy and Environmental Systems | | | | |
| | erin | | | | | | | | | Robotics for Extreme Environments | | and Environmental Systems | Intelligent Control Systems | | | |
| |) DI | | | | | | | | | Fundamental Mechatronics I | Fundamental Mechatronics II | Intelligent Robotics | | | | |
| | Course | | | | | | | | | | | | | | | |
| | rse | | | | | | | | | | | | Design of Robots | | | |
| | Š | | | | | | | | | | | | stems Engineering I | | | |
| | Major | | | | | | | | | | Cognitive Engineering | | | | | |
| | | | | | | | | | | | | | | | | |
| | | - | | | | | | | | | | | | | | |



Curriculum map (Department of Electrical and Communication Engineering)

Required Subjects
 Restricted Subjects (*: Recomment

| Open Home State Open Home | | | | • | | | | 1 | | | | 1 | | | | | |
|---|---------------|-------------|----------------------|---|--|------------------------------|--|------------------|-----------------------|----------------------------|-------------------|---|---|----------------------|--|--|--|
| Market State Market State< | Classificatio | | ation | | | | | | | | | | | 4 Tours 4 Tours 0 | | | |
| | | | | | Term 2 | Term 3 | l erm 4 | Term 1 | lerm 2 | Term 3 | l lerm 4 | lerm 1 | l lerm 2 | Term 3 | l lerm 4 | lerm 1 | Term 2 |
| | | Gener | | Introduction of Mechanical and System Engineering Introduction to Electrical and Communication Engineering | | | | | | | | ©Engineering Ethics | | ©Technical Writi | ng and Presentation |] | |
| Open Provide State | | al Edu | | and Bioengineering Sintroduction to Information Processing 1 | Introduction to Information Processing 2 |] | | | | | | |] | | | | |
| Open Provide State | | JCa | | | [| | | | | Courses fo | r Developing Inte | ellectual Understa | nding(Society, L | ife, Nature) | | | |
| Open Provide State | | tion | | | Courses f | for Developing P | Practical Knowled | ge and Sensitivi | ity (Practice, Arts) | , Courses for De | veloping Genera | I Skills and Healt | h(Information Ed | lucation , Caree | r Education, Heal | th and Sports Sc | iences, Acade |
| Image: control (Fright American) Control (Fright American) <thcontrol (fright="" american)<="" th=""></thcontrol> | | S | | | | | | | | | | | | | | | |
| 0 | | S | | | | | | © English(S& | &L)-1, English(S&L)-2 | , English(R&W)-1, | English(R&W)-2 | | | | | | |
| Normal Second Second< | | | | | , <u>, _ , _ , _ , _ , _ , _ , _ , _ , _ ,</u> | ,,,,,_,_,,_,,,,,,,,,,,,,,,,, | | 1 | | Language Cou | rses(English, N | on-English Foreig | gn Languages) | | | ·L | |
| No Oriented Copie Oriented Copie <td></td> <td></td> <td></td> <td></td> <td></td> <td> </td> <td></td> <td></td> <td></td> <td> </td> <td></td> <td></td> <td></td> <td>[</td> <td></td> <td> </td> <td>,</td> | | | | | | | | | | | | | | [| | | , |
| No Contract Contraction Processes (Contraction) < | | IVIA | Ma | Caboratory Work and Pr | Practice on Basic Engineering | Safety and Security | Managements for Engineer |] | | | | ©Technical English |] | | | | |
| No Contract Contraction Processes (Contraction) < | | <u>_</u> | e T | | - | + Basic Physics | + Basic Physics | | | | | | J | | | | |
| No Contract Contraction Processes (Contraction) < | | | ġ | | | | | - | | | | | | | | | |
| No Contract Contract Neutropy of Contract Operating of Contra | | lua | nda | | | | | | | | | | | | | | |
| No Contract Contraction Processes (Contraction) < | | G | tion | | | ☆Differential Equation 1 | I ☆ Differential Equation 2 | ! | | | | | | | | | |
| View 0 Creat Theory Al 0 Crea | | <u>a</u> | | Basic Chemistry | | sic Chemistry | | | | | | | | | | | |
| View 0 Creat Theory Al 0 Crea | | ò | òù | | | Probability and Statistics | Probability and Statistics Probability and Statistics2 | | | | | | | | | | |
| Model Outcommentation | | 000 | Ses | | | | | | | | | | | | | | |
| Model Outcommentation | | | | | ſ | | 1 | © Electrical a | | @Electrical en | | | 1 | @Electrical ap | d Communication | | |
| Northogo Communication | | | | O Circuit Theory A1 | © Circuit Theory A2 | OAnalysisB1 | | Engin | eering Lab A | ©Electrical and Enginee | ring Lab B | | | Enginee | ering Lab C | - | |
| Image: second | | r | Department N | | | | Communication | | _ | | | |] | | | - | |
| Image: set in the set in th | | | | | | | Engineening | | n | | | ©Special Lectures | | | | | |
| Image: second | | | | | | | | | | | | | | Technical English Br | @Technical English B2 | | |
| Image: second | | | | | | | | | | | | | | | | | ©Grad |
| Image: second | _ | ajo | laio | | | | | Linear Algebra I | B Vector Analysis | | | Complex Analysis | |] | | | |
| Image: second | Majo | 2 | r o | | | | | Circuit Theory E | | | Line Theory | | Electronic | | | | |
| Image: second | oro | - Cura | ours | | | | | Introduction to | Mathematics | | | | | - | | | |
| Image: Control Engineering A grant Bill Control Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Power System Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Image: Control Engineering A grant Bill Image: Control Engineering A grant Bill Electronic Grant Apparatus Bill Electronic Grant Apparatus Bill Power System Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Power System Bill Description of Electronic Theory and Apparatus Bill Electronic Theory and Apparatus Bill Electronic Theory and Bill< | our | u u u | Ses . | | | | | | Logic Circuits | | J | | Digital Digital Freebooking | - | | | |
| Image: Control Engineering A grant Bill Control Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Power System Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Image: Control Engineering A grant Bill Image: Control Engineering A grant Bill Electronic Grant Apparatus Bill Electronic Grant Apparatus Bill Power System Engineering A grant Bill Description of Electronic Machinery and Apparatus Bill Power System Bill Description of Electronic Theory and Apparatus Bill Electronic Theory and Apparatus Bill Electronic Theory and Bill< | ses | | | | | | | | Electromagnetism | - | | Inter | nship |] | | | |
| Normalization Interview Normalization Semiconductor avide proving | _ | | | | | | | | A | | | | | | | | |
| Normalization Interview Normalization Semiconductor avide proving | | | Cont T | | | | | | | | | | - | | - | | |
| Very Properties Image: Properties Image: Properties Image: Properties Image: Properties Image: Properties Image: Properties | | | nergy ai trol Sys | | | | | | | ©Electromagnetism B | | Electrical Machinery and Apparatus B1 | | Engineering A | Engineering B | Machinery 1 Laws and Regulations of | Design of Electrica Machinery 2 Laws and Regulations Electric Power Suppl |
| Very Part Province Power Electronic Devices Power Electronics Electronic Devices Engineering Power Electronics System System Signeering Optoelectronics Electronic Circuits A Circuits A Circuits A Circuits A Electronic Materials Very Part Power Electronic Circuits A Electronic Circuits A Electronic Materials Electronic Materials Electronic Materials Very Part Power File F | | | nd tems | | | | | | | | | Electric Power Generation Technology 1 | Electric Power Generation Technology 2 | A | В | _ | |
| Image: space spac | | 0 | Intelli | | | | | | | @Electromagnetism | @Electronic | Electronic | | Electronic Devices | | | |
| Image: space spac | | ourse | gent E Syste | | | | | | | B | | | | Optoelectronics | Electrical and Electronic Materials | | |
| Image: space spac | | Ma | lect | | | | | | | | | | Electromagnetic Wave Engineering | | | | |
| Image: space spac | | jor | onic | | | | | | | | | | | | | Information-oriented s | society and technol |
| Image: Security of the security | | ľ | | | | | | | | | | - | | Informatio | on Security | 1 | |
| | | | | | | | | | | ©Data Structures | Ocomputer | Computer Architecture A | | | | 1 | |
| | | | Jetw gine | | | | | | | and Algorithms | Networks A | | Mobile Communications | | |] | |
| | | | ork | | | | | | | | | | | | Exercise B | | |
| | | | Ð | | | | | | | | | | | | Graph Theory | | |

| 4th | year | |] |
|--|------------|--------|---|
| 2 | Term 3 | Term 4 | |
| | | | |
| | | | |
| | | | |
| ademi | c Writing) | | Faculty of Engineering |
| | | | Department of Electrical and Communication Engineering |
| | | | Multifaceted thinking skills [General Education 1] |
| | | | |
| | | | Ethics for engineers [General Education 2] |
| | | | Basic knowledge for logical thinking and application [Expertise 1] |
| raduat | ion Thesis | | Fundamental knowledge in the field of electrical and communication engineering [Expertise 2-1] |
| | | 4 | Ability to apply an advanced level of knowledge and skills in the field of electrical and communication engineering [Expertise 2-2] |
| ectrical ry 2 lations of Supply 2 | | | Design skills to meet social demands [Ability to Use Information] |
| | | | Communicative skills [Ability to Act 1] |
| chnology | | | Skills for planning, conducting, and managing tasks [Ability to Act 2] |
| | | | Skills for autonomous and continuous learning [Ability to Achieve Self- realization] |
| | | | |

Curriculum map (Department of Information Technology)

| | | | | | | | , | | | | | C | Required Subjects | Restricted Subjects | dicates the number of c | lass hours per week | |
|---|---|--|---|---|-------------------------------|------------------------------|------------------------------------|----------------------------------|--------------------------------------|--|-------------------------------------|---|-------------------|---|-------------------------|-----------------------------|---------------|
| | | | | | | | | | | | | | O:Reco | mmended Subjects | | _ | |
| Classification | | 1st ye | | | | | year | | | 3rd year | | | | 4th year | T | | |
| | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 Term | 3 Term 4 | 4 | |
| G | | | | | | | | | | | | | | | | | |
| Gene | OAll University Guidance I, II Introduction to Information Processing 1 | Introduction to Information Processing 2 | | | | | | | | | | | | | | | |
| ieral | Processing 1 | Processing 2 | | | | | Courses for | Developing Inte | ellectual Understa | nding (Society, L | Life, Nature) | | | LL | | 1 | |
| Education | | Courses fo | or Developing Pi | ractical Knowled | lge and Sensitivity | (Practice, Arts) | | | | | ducation , Career | Education, Health | and Sports Sc | iences, Academic Writing) | | | |
| icati | | | | | |) | English-relat , English(R&W)-1, | | on-English Foreig | n Languages | | | | | | - | |
| | (Students tak | -1,2, English(Reading)-1,2, ke two course each seme | ester in the designate | ed semester) | | | mester in the desig | | | | | | | | | Faculty of Eng | nainee |
| Courses | Introduction of Mechanical and System Engineering Introduction to Electrical and Communication Engineering | | | | | | | | 1 | | | | | | | Departme | ent of |
| Irse | Introduction to Information Technology | | | | | | | | | | © Technical Writing | © Engineering Ethics | | | | Information Te | echno |
| S | Introduction to Chemistry and Bioengineering | | | | | | | | | | and Presentation | | | | | | |
| 1 | - | | | | | | | | | | | | | | | Multifaceted | think |
| S | | | | | | | | | ©Technical English | 1 | | | | | | skills | s |
| Major | ©Laboratory Work and Pra | actice on Basic Engineering | ©Safety and Security Ma | anagements for Engineer | | | | | | 1 | | | | | | [General Educ | Jcation |
| Fot | ©Analysis1 ©Linear Algebra1 | ©Analysis2 ©Linear Algebra2 | | | | | | | | | | | | | | | |
| unda | S Entour Angebra 1 | | Basic Physics (Classical Mechanics) 1 Basic Physics (Electromagnetics) 1 | Basic Physics (Classical Mechanics) 2 Basic Physics (Electromagnetics) 2 | | | | | | | | | | | | Ethics for en | ngine |
| atior | [| Basic Chemistry | (Electromagnetics) 1 | (Electromagnetics) 2 | - | | | | | | | | | | | [General Educ | |
| nal | l | Dasic Orientistry | Basic Biology 1 | Basic Biology 2 | - | | | | | | | | | | | | |
| Cou | | | O Programming 1 | O Programming 2 O Probability and Statistics 2 | | | | | | | | | | | | Basic knowle | |
| rse | | | | Differential Equation2 | 2 | | | | | | | | | | | logical thinki applicati | |
| S | | | | | | | | | | | | | | | | [Expertise | se 1] |
| σ | | | | | | | | | | | | | | | | | |
| Lan | | | | | ©Exercises on Programming1 | Exercises on Programming2 | System Programming 1 | ©System Programming: | 2 ©Programming Techniques | Object-Oriented Programming Languages | ©Software Design | Software Engineering | | | | Knowledg | |
| ngua | | | | | Programming Language Theory | | | | ONon-Procedural | | | | | | | programn [Expertise | |
| Programming Language | | | | | | | | | Programming Languages | | | | | | | | |
| | | | | | OData Structures | ©Computer | ©Operating | Logic Circuits | | | ©Theory of Computer Control | | | | | Knowledg informat | |
| Proce Sys | | | | | and Algorithms | Hardware | ©Operating Systems | Logio Oriouno | 1 | Database Systems | Computer Control Theory | ONetwork Systems | | | | processing s | |
| 1 2 8 2 | | | | | | | Ocomputer Architecture I | | | Computer Systems | | J | | | | [Expertise | e 2-2 |
| Information Fundar Isona Information Department Mi | | | | | | | | | | | | | | | | Theories of | of the |
| | | | | | | OInformation | Pattern Recognition and Learning | . | ØArtificial | | | Digital Signal | | | | fundament | ntals of |
| ormat | | | | | ◎Graph Theory | Theory | Computer Mathematics | OApplied Mathematics | s Intelligence | Applied Linear Algebra | - | Processing Image Media Processing | | | | information pro | |
| Basing Fundamentals of saving Information Processing Department Major Courses | | | | | | OApplied Analysis | | | | Automata and Languages | | image media Processing | | | | | |
| rocess rocess | | | | | | | | | | Natural Language Processing Computer Graphics | 4 | | | | | Design skills social dem | |
| ours | | | | | | | | | | Algorithms and Computational Complexity | | | | | | [Ability to | o Use |
| ses | | | | | | | | | | Information Security | | | | | | Information | tion] |
| | © Fundamental Computer Science 1 | © Fundamental Computer Science 2 | | | | | | | Information Technology | Internship | ©Information Technology | ©Information Technology | | | | Communicati | tivo ek |
| Laboratory | | | | | | | | | Experiments A (Computer Hardware) | • | Experiments B (Media Processing) | Experiments C (Computer Software) | | | | [Ability to A | |
| orat | | | | | | | | | | 1 | | | | OGraduation Thesis | | | |
| tory | | | | | | | | | | | | | | | | Skills for pla | |
| | | | | | | | | | | | | Information Technology in Practice 1 | | Information Technology in Practice 2 | | conducting managing | |
| | _ | | | | | | | | | | | in Practice 1 | | In Practice 2 | | [Ability to A | |
| Computer Engineering Course | | | | | | | | Ocomputer Architecture II | Knowledge | 1 | ©Compilers | | | | | Skills for auto | onom |
| Cou | | | | | | | | Fundamental Image Processin | Engineering 9 | | 3-D Image Processing | | | | | and contin | inuous |
| nputer Artificial Ineering Program Course Major | | | | | | | | | | | | | | | | learnin [Ability to Achi | ng hieve ' |
| Artif Intel Prog | | | | | | | | ØFundamental Image Processing | ØKnowledge | | ©3-D Image Processing | | | | | realizatio | |
| lligen gramr)jor | | | | | | | | Computer Architecture II | Engineering | | Compilers | | | | | | |
| ming | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 1 | | 1 | | | <u> </u> | | L | |

No required subjects in this term

Curriculum map (Department of Applied Chemistry and Biotechnology)



| ~ | acification | | | 1st | year | | | 2nd | year | 3rd year | | | | | | 4 | | | |
|----------------|------------------------------|---|--|---|---|---|-----------------------|--|--------------------------|---------------------------------------|--|---|---------------------------------------|--|-----------------|---------------|--|--|--|
| Classification | | ation | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | Term 3 | Term 4 | Term 1 | Term 2 | | | |
| | | | ◎All University Guidance I, II | | | | | | | | | | | | | | | | |
| | | | Introduction to Information Processing 1 | Introduction to Information Processing 2 | 1 | | | | | | | | | | | | | | |
| | ဝမ |) | | | | | | Courses for Developing Intellectual Understanding(Society, Life, Nature) | | | | | | | | | | | |
| | ne | | | Courses | for Developing P | Practical Knowled | ge and Sensitivi | tv(Practice_Arts) | | | | | | Education, Healt | h and Sports Sc | iences. Acade | | | |
| | General Education Courses | _ | | | <u>ioi poroioping i</u> | | go ana cononin | and Sensitivity(Practice, Arts), Courses for Developing General Skills and Health(Information Education, Career Education, Health and Sports English-related Subjects • Non-English Foreign Languages | | | | | | | | | | | |
| | Ύп | 1 | | | | | | | | | | T Languages | | | | | | | |
| | u d | - | © English(Speaking (Observation) | g)-1,2, English(Reading)-1 | ,2, English(Writing)-1,2, E | English(Listening)-1,2 | | © English(S&L)-1,2 | , English(R&W)-1, | 2 | | | | | | | | | |
| | ă | | (Students ta | ake two course each se | mester in the designate | ed semester) | (Students take | one course each se | mester in the desig | nated semester) | | | | | | | | | |
| | on | - | and System Engineering Introduction to Electrical | - | | | | | | | ©Engineering Ethics(Imple | mented in Intensive Lecture) | ©Technical Writing | g and Presentation | | | | | |
| | | | and Communication Engineering ©Introduction to Information Technology | | | | | | | | | | | | | | | | |
| | | | Introduction to Chemistry and Bioengineering | | | | | | | | | | | | | | | | |
| | | Maior | @Analysis1 | ©Analysis2 | | | | | | | | | ©Technical English 1 | ©Technical English 2 | | | | | |
| | 0 | | ©Linear Algebra1 | ©Linear Algebra2 | 1 | | | | | | | | <u> </u> | | | | | | |
| | - | | @Laboratory Work and P | ractice on Basic Engineering | ©Safety and Security Ma | anagements for Engineer | | | | | | | | | | | | | |
| | - | oundat | | | Basic Physics (Classical Mechanics)1 | Basic Physics (Classical Mechanics)2 | | | | | | | | | | | | | |
| | 5 | dat | | | (Classical Mechanics)1 Basic Physics (Electromagnetics) 1 | (Classical Mechanics)2 Basic Physics (Electromagnetics) 2 | | | | | | | | | | | | | |
| | (| ational | | | (Electromagnetics/ T | (Electromagnetics) 2 | | | | | | | | | | | | | |
| | ŝ | a l | | OBasic Chemistry | | - | | | | | | | | | | | | | |
| | | Cou | | | OBasic Biology 1 | OBasic Biology 2 | | | | | | | | | | | | | |
| | | ഗ് | | | Programming 1 Probability and Statistics1 | Programming 2 Probability and Statistics2 | | | | | | | | | | | | | |
| | | es | | | Differential Equation 1 | Differential Equation 2 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | ©Physical Chemistry 1 | | OPhysical Chemistry 1 | | | | | | | | | | |
| | | | | | | | Inorganic Chemistry 1 | | Olnorganic Chemistry 2 | | | | | | | | | | |
| | 6 | | | | | | OQuantum Chemistry 1 | | | | | | | | | | | | |
| | Ľ Ľ | pa | OFundamental Organic | OFundamental Organic Chemistry 2 | | | | | | | | | | | | | | | |
| | ses | | OFundamental Organic Chemistry 1 | Chemistry 2 | ©Organic Chemistry 1A | ©Organic Chemistry 1B | | OOrganic Chemistry 2 | | | | | | | | | | | |
| | | nei | | | | | | OBiochemistry 1 | OBiochemistry 2* | | | | | | | | | | |
| | Department Major Courses | | | - | | | | C Biodridinioti y 1 | | 1 | | | | | | | | | |
| | | Ma | O Analytical Chemistry 1 | OAnalytical Chemistry 1 | | | OBasic Experim | nents in Chemistry | | | © English for Chemistry and Biotechnology 1 | O English for Chemistry and Biotechnology 1 | | | | | | | |
| | | or I | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Internship | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | Material and Process Course (Required Subjects) | | | | | | | | ©Material Process | ØMaterial Process | | ØMaterial Process | l i i i i i i i i i i i i i i i i i i i | | | | | |
| Σ | | vlate oces quire | | | | | | | | Experiment 1 | Experiment 2 | | Experiment 3 | | | | | | |
| aj | | rial a s Co d Su | | | | | | | ©Chemical Engineering 1A | ©Chemical Engineering 1B | Ochemical Equipment Design and Drawing 1 | | | | | | | | |
| Ÿ | | nd bject | | | | | | | | ©Physical Chemistry 3 | | | | | | | | | |
| ğ | | - | | | | | | | | | | | | | | | | | |
| Major Courses | | Synth (Requ | | | | | | | | | | | | | | | | | |
| es | | hetic Co | | | | | | | | ©Synthetic Chemistry Experiment 1 | ©Synthetic Chemistry Experiment 2 | | ©Synthetic Chemistry Experiment 3 | | | ©The ⊚Grad | | | |
| | | netic Cher Course uired Sub | | | | | | | | ©Organic Chemistry 3 | Experiment2 | | Experimento | | | ⊚Grad | | | |
| | | jec nis | | | | | | | | , , , , , , , , , , , , , , , , , , , | 4 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | Bioengin Cou (Required | | | | | | | | | | | | | | | | | |
| | | peng Co luirec | | | | | | | | OBiotechnology | OBiotechnology | | OBiotechnology | | | | | | |
| | | ineer urse i Sut | | | | | | | | Experiment 1 | Experiment 2 ©Biochemistry 3 | | Experiment 3 ©Biochemistry 4 | | | | | | |
| | 0 | ing | | | | | | | | | © Biochemistry 3 | | @blochemistry 4 | | | | | | |
| | Course Major | <u></u> | | | | | | | | | | | | | | | | | |
| | se | ô | | | | | | | | | | Chemical Equipment | | | | | | | |
| | Ň | Each Courses (Conditional Elective Subjects - Restricted | | | | | | | | | Chemical Engineering 2A | Design and Drawing 2 Chemical Engineering 2B | - | Chemical Process Engineering Inorganic Reaction Chemistry | | | | | |
| | jo | ditio | | | | | | | | | Shermoar Engineering 2A | Inorganic Chemistry 3 | Inorganic Chemistry 4 | Chemistry of Inorganic Substance | | | | | |
| | - | ma | | | | | | | Instrumental Analysis | | Physical Chemistry 4 | | , , , , , , , , , , , , , , , , , , , | Biomaterials | | | | | |
| | | E | | | | | | | | | | | Synthetic Organic Chemistry | | | | | | |
| | | ectiv | | | | | | | | | | | | Physical Organic Chemistry | | | | | |
| | | Eac | | | | | | | | | | | | Industrial Organic Chemistry | | | | | |
| | | Sup | | | | | | | | | | | | Stereochemistry | | | | | |
| | | ject | | | | | | | | | Organic Chemistry 4 | | ecular Chemistry | Delene Directoria | 1 | | | | |
| | | ırse ts • F | | | | | | | | | | Polymer Chemistry | | Polymer Physical Chemistry | | | | | |
| | | s ?es | | | | | | | | | | Molecular Biology | | Gene Engineering | | | | | |
| | | trict | | | | | | | | | | Biophysics | | Protein Engineering | | | | | |
| | | ëd | | | | | | | | | | | | Enzyme Engineering Applied Biology | | | | | |
| | | Subjects) | | | | | | | | | | | | Microbial Chemistry | | | | | |
| | | ojec | | | | | | | | | | | | | | | | | |
| | | ts) | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

No required subjects in this term

 $O\!:\!Recommended \ subjects$, $\ *$:Required Subjects in the Biotechnology course th year Term 4 Term 3 emic Writing) Faculty of Engineering Department of Applied Chemistry and Biotechnology Multifaceted thinking skills [General Education 1] Ethics for engineers [General Education 2] Basic knowledge for logical thinking and application [Expertise 1] Knowledge and practical ability [expertise 2-1] Ability to create new technologies and design devices and materials [expertise 2-2] Ability to design and esis Exercise conduct experiments, and duation Thesis to analyze data [expertise 2-3] Design skills to meet social demands [Ability to Use Information] Communicative skills [Ability to Act 1] Skills for planning, conducting, and managing tasks [Ability to Act 2] Skills for autonomous and continuous learning [Ability to Achieve Selfrealization]