

## **Basic Engineering Program**

### **MODULE HANDBOOK (1st – 2nd semester)**

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## INTRODUCTION

The Basic Engineering Program is a preparatory year for GMIT's Bachelor programs; it prepares students for their application to study GMIT's undergraduate programs. Essentially, it includes teaching content which corresponds to the final two years of schooling in other countries, e.g. Germany. In addition the Basic Engineering Program also imparts key competences which will play an important role in the bachelor courses. Language of instruction is English.

The Handbook provides Aims, Objectives, and Learning Outcomes of the Basic Engineering Program at the German-Mongolian Institute of Technology and Resources (GMIT)

## GENERAL MODULES

### BEP MATH1 – Mathematics I /Fall/

<b>Module Title</b>	Mathematics	<b>Module-Code</b>	BEP-MATH1
<b>Workload</b>	240 h	<b>Contact hours</b>	96 h
		<b>Individual study</b>	144 h
<b>Module Coordinator</b>	Senior Lecturer Dr. L. Oyuntsetseg	<b>Language</b>	English
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Vectors in a plane or in the space, scalar product</li> <li>2. Lines in a plane</li> <li>3. Planes, cross product, distance from a point to a line or plane</li> <li>4. Geometry with trigonometry</li> <li>5. Basic of arithmetic, Modeling with equation and inequalities</li> <li>6. Some functions, transformation of function</li> <li>7. Exponential, logarithmic and trigonometric functions</li> <li>8. Matrices, elementary transformations, row echelon form</li> <li>10. Solving system of linear equation by Gauss elimination, linear equations system</li> <li>11. Determinant, Cramer's rule, Inverse of matrix</li> </ol>		
<b>Learning outcomes</b>	<p>This module will prepare students to Bachelor's programs of GMIT. The students study an introduction to mathematics for higher mathematics. On successful completion of this module, the students should be able to:</p> <p>Continue to study higher mathematics.</p> <ol style="list-style-type: none"> <li>1. Have some basics of analytical geometry, functions and linear algebra</li> <li>2. Read and use some books in mathematics.</li> <li>3. Improve reading mathematics in English to be introduced some problems in physics and mechanics and other subjects</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Stewart James, Redlin Lothar, Aleem Watson, Precalculus, 6<sup>th</sup> edition, 2012,</li> <li>2. Calculus, Early transcendentals, 10<sup>th</sup> edition, James Stewart, 6.</li> <li>3. Some other additional materials</li> </ol>		
<b>Form of teaching</b>	<p>Lecture (4UoI)</p> <p>Recitation (4 UoI)</p>		
<b>Assessment methods</b>	Written examination (>90 min.)		
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering</p> <p>B.Sc. Raw Materials and Process Engineering</p> <p>B.Sc. Environmental Engineering</p> <p>B.Sc. Industrial Engineering</p> <p>B.Sc. Electrical Engineering</p> <p>B.Sc. Mechatronics</p>		
<b>Prerequisites for participation</b>	None		

<b>Requirements for receiving credit points</b>	Passing the examination and academic performance
<b>Grading system</b>	The grade (100p) for the module is based on the sum of a written examination and midterm exams (70:30)

## BEP MATH2 – Mathematics II /Spring/

<b>Module Title</b>	Mathematics	<b>Module-Code</b>	BEP-MATH2
<b>Workload</b>	240 h	<b>Contact hours</b>	96 h
		<b>Individual study</b>	144 h
<b>Module Coordinator</b>	Senior Lecturer Dr. L. Oyuntsetseg	<b>Language</b>	English
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Limit, derivatives</li> <li>2. Derivative of polynomials, trigonometric functions,</li> <li>3. Chain rule, implicit differentiation</li> <li>4. Application of differentiation, analyse function by its derivatives, sketch a function,</li> <li>5. Integrals, Area, volume,</li> <li>6. Techniques of integral, substitution method, integration by parts, trigonometric integrals, rational integrals</li> </ol>		
<b>Learning outcomes</b>	<p>This module will prepare students to progress to Bachelor's programs of GMIT in mathematics. The students will be given an introduction to mathematics for higher mathematics. On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. To be prepared for continue study of higher mathematics.</li> <li>2. Have some basics of mathematical analysis.</li> <li>3. Solve problems in mathematical analysis.</li> <li>4. Read and use some books in mathematics.</li> <li>5. Use some problems in physics, mechanics and other subjects.</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Stewart James, Redlin Lothar, Aleem Watson, Precalculus, 6<sup>th</sup> edition, 2012,</li> <li>2. Calculus, Early transcendentals, 6<sup>th</sup> edition, James Stewart,</li> <li>3. Some other additional materials</li> </ol>		
<b>Form of teaching</b>	<p>Lecture (4Uol) Recitation (4Uol)</p>		
<b>Assessment methods</b>	Written examination (>90 min.)		
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Electrical Engineering B.Sc. Mechatronics</p>		
<b>Prerequisites for participation</b>	None		
<b>Requirements for receiving credit points</b>	Passing the examination and academic performance		
<b>Grading system</b>	The grade consists of 30 points for the academic performance and midterm exams, 70 points for the final exam		

## BEP PHY1 – Physics I /Fall/

<b>Module Title</b>	BEP Physics 01	<b>Module-Code</b>	BEP-PHY1
<b>Workload</b>	180h	<b>Contact hours</b>	72
		<b>Individual study</b>	108
<b>Module Coordinator</b>	D. Otgonbayar	<b>Language of Instruction</b>	English
<b>Contents</b>	<p>Statics: Vector operations, components, dot product, cross product, torque, Varignon's theorem, free body diagrams, equilibrium of a particle, center of gravity and centroid, strain and stress</p> <p>Kinematics: motion along a straight line, free fall, projectile motion, uniform circular motion, centripetal acceleration</p> <p>Newton's Laws and their applications, principle of conservation of momentum</p>		
<b>Learning Outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate a solid understanding of coordination system, vector, and apply the principles of balancing forces and moments to analyze structures and systems.</li> <li>2. Use vector operations to manipulate and analyze physical quantities, the equilibrium of structures, considering both two-dimensional and three-dimensional systems.</li> <li>3. Calculate and determine forces and moments, using methods such as the equations of equilibrium and free-body diagrams.</li> <li>4. Understand and apply concepts such as displacement, average velocity, and instantaneous velocity.</li> <li>5. Differentiate between speed and velocity and analyze motion with variable acceleration.</li> <li>6. Solve problems involving free fall and non-constant acceleration.</li> <li>7. Use vectors to represent position and velocity in two or three dimensions.</li> <li>8. Comprehend the concept of force, its vector nature, and the significance of net force on an object.</li> <li>9. Apply Newton's laws to solve problems involving equilibrium and acceleration.</li> <li>10. Analyze different types of friction forces and solve problems related to circular motion.</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. University Physics with Modern Physics (XIII ed.) Young, Freedman</li> <li>2. Engineering Mechanics Statics ( VII ed.) Meriam, Kraige</li> <li>3. Physics for Scientists and Engineers with Modern Physics (IX ed.) Servey, Jewett</li> <li>4. Fundamentals of Physics (VIII ed.) Halliday, Resnick</li> </ol>		
<b>Form of teaching</b>	<p>Lecture ( 2 UoI)</p> <p>Recitation /Lab ( 4 UoI)</p>		
<b>Assessment methods</b>	Written examination (120 min) and academic performance		

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<b>Associated study programme</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Electrical Engineering  B.Sc. Mechatronics
<b>Prerequisites for participation</b>	None
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination accounting for 70%



## BEP PHY2 – Physics II /Spring/

<b>Module Title</b>	BEP Physics 02	<b>Module-Code</b>	BEP-PHY2
<b>Workload</b>	180h	<b>Contact hours</b>	72
		<b>Individual study</b>	108
<b>Module Coordinator</b>	D. Otgonbayar	<b>Language of Instruction</b>	English
<b>Contents</b>	<p>Energy and Work: Kinetic and Potential energy, Conservation of Energy            Force between point charges, Electric field of a point charge, Electric potential, Capacitors and capacitance, Electric current, Potential difference, Resistance and resistivity, Sources of electromotive force, Conservation of charge and energy            Oscillations and Waves: Simple harmonic motion, Energy in simple harmonic motion, waves</p>		
<b>Learning Outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Comprehend the concept of work and execute calculations based on it</li> <li>2. Understand kinetic energy and solve problems involving work, kinetic energy, and power.</li> <li>3. Explore gravitational and elastic potential energy.</li> <li>4. Differentiate between conservative and nonconservative forces and use energy diagrams.</li> <li>5. Recall key concepts related to electric charge and fields, potential, and the function of capacitors in circuits.</li> <li>6. Grasp the forces acting on charges in uniform electric fields and the role of capacitors in circuits.</li> <li>7. Apply Ohm's and Kirchhoff's laws to electric systems, drawing and interpreting complex circuit diagrams.</li> <li>8. Analyze electric systems, considering sources, switches, resistors, ammeters, and voltmeters.</li> <li>9. Define and recall fundamental terms related to oscillations, including displacement, amplitude, frequency, and period.</li> <li>10. Explain the principles of harmonic oscillation, illustrating the relationship between displacement, velocity, and acceleration in simple harmonic motion.</li> <li>11. Utilize mathematical models to solve equations of motion for harmonic oscillations, demonstrating proficiency in applying mathematical tools such as differential equations and trigonometric functions.</li> <li>12. Analyze and interpret energy aspects in oscillatory systems, distinguishing between kinetic and potential energy and evaluating how they vary throughout the oscillation cycle.</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. University Physics with Modern Physics (XIII ed.) Young, Freedman</li> <li>2. Engineering Mechanics: Dynamics, (VIII ed.) James L. Meriam, L. G. Kraige, J. N. Bolton</li> <li>3. Physics for Scientists and Engineers with Modern Physics (IX ed.) Servey, Jewett</li> <li>4. Fundamentals of Physics (VIII ed.) Halliday, Resnick</li> </ol>		

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<b>Form of teaching</b>	Lecture ( 2 UoI) Recitation /Lab ( 4 UoI)
<b>Assessment methods</b>	Written examination (120 min) and academic performance
<b>Associated study programme</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Electrical Engineering B.Sc. Mechatronics
<b>Prerequisites for participation</b>	None
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination accounting for 70%

## BEP CHEM1 – Chemistry /Fall/

<b>Module Title</b>	Chemistry	<b>Module-Code</b>	BEP-CHEM1
<b>Workload</b>	120 h	<b>Contact hours</b>	48 h
		<b>Individual study</b>	72 h
<b>Module Coordinator</b>	Dr. T.Narangarav	<b>Language</b>	English
<b>Contents</b>	<p>This module serves as an introduction to the fundamental principles of chemistry, providing students with a solid foundation for further studies at the bachelor's level. The course covers essential concepts in atoms, molecules, ions; chemical reactions; gases; chemical bonding; electronic structure of atom, and introduces students to the interdisciplinary nature of chemistry.</p> <ol style="list-style-type: none"> <li>1. Introduction to chemistry: atoms, molecules and ions</li> <li>2. Naming molecular compound, acid and base and hydrates</li> <li>3. Mass relationship in chemical reaction</li> <li>4. Reactions in aqueous solutions</li> <li>5. Gases</li> <li>6. Introduction to thermodynamics</li> <li>7. Electronic structure of atoms</li> <li>8. Chemical bonding</li> </ol>		
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <p>Understanding atoms, molecules and ions</p> <ul style="list-style-type: none"> <li>- Define and describe the structure of an atom.</li> <li>- Identify and differentiate between protons, neutrons, and electrons.</li> <li>- Determine the atomic number and mass number of an atom.</li> <li>- Write chemical formulas for compounds, both ionic and molecular.</li> <li>- Understand the rules for naming compounds and elements.</li> </ul> <p>Master Chemical Reactions in Aqueous Solution:</p> <ul style="list-style-type: none"> <li>- Balance chemical equations in aqueous solution and apply stoichiometric principles.</li> <li>- Classify and predict various types of chemical reactions in aqueous solution.</li> <li>- Differentiate between Arrhenius, Bronsted-Lowry definitions of acid-base</li> <li>- Understand the concept of ions and their significance.</li> <li>- Predict the charge of ions formed by different elements.</li> <li>- Define oxidation and reduction and identify redox reactions and the transfer of electrons.</li> <li>- Define precipitation reactions and recognize when they occur.</li> <li>- Identify the key components involved in a precipitation reaction: soluble and insoluble compounds.</li> </ul> <p>Investigate properties, behavior and principles governing gases:</p> <ul style="list-style-type: none"> <li>- Understand and apply Boyle's, Charles's, and Avogadro's laws and the ideal gas law equation to solve problems involving changes in pressure, volume, and temperature.</li> <li>- Understand Dalton's law of partial pressures and calculate the partial pressure of a gas in a mixture.</li> </ul> <p>Introduction to Thermodynamics:</p> <ul style="list-style-type: none"> <li>- Define heat, work, and energy in chemical systems.</li> </ul>		

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	<ul style="list-style-type: none"> <li>- Apply the first law of thermodynamics to understand energy changes.</li> </ul> <p>Understand Atomic Structure:</p> <ul style="list-style-type: none"> <li>- Define and differentiate between subatomic particles.</li> <li>- Determine the electronic configuration of an atom</li> </ul> <p>Explore Chemical Bonding:</p> <ul style="list-style-type: none"> <li>- Identify and explain ionic and covalent bonding.</li> <li>- Construct Lewis structures and predict molecular geometries.</li> </ul>
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Goldsby, K., &amp; Chang, R. (2015). Chemistry. McGraw-Hill Higher Education.</li> <li>2. Silberberg, M. S., Amateis, P., Venkateswaran, R., &amp; Chen, L. (2006). Chemistry: The molecular nature of matter and change (Vol. 4). New York: McGraw-Hill.</li> <li>3. Ryan, L., &amp; Norris, R. (2014). Cambridge International AS and A Level Chemistry Coursebook with CD-ROM. Cambridge University Press</li> </ol>
<b>Form of teaching</b>	<p>Lecture (2 UoI)</p> <p>Recitation (2 UoI)</p>
<b>Assessment methods</b>	Written examination (120 min) and academic performance
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering</p> <p>B.Sc. Raw Materials and Process Engineering</p> <p>B.Sc. Environmental Engineering</p> <p>B.Sc. Industrial Engineering</p> <p>B.Sc. Electrical Engineering</p> <p>B.Sc. Mechatronics Engineering</p>
<b>Prerequisites for participation</b>	None
<b>Requirements for receiving credit points</b>	Passing the examination
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination including two midterm exams and final exam accounting for 70%.

## BEP CHEM-101 – Chemistry /Spring/

<b>Module Title</b>	Chemistry	<b>Module-Code</b>	CHEM-101
<b>Workload</b>	120 h	<b>Contact hours</b>	48 h
		<b>Individual study</b>	72 h
<b>Module Coordinator</b>	Dr. T.Narangarav	<b>Language</b>	English
<b>Contents</b>	<p>Building upon the foundations established in the fall semester, this module delves into advanced concepts in chemistry essential for pre-bachelor students. Topics include the continuation of the periodic relationship among the elements, an in-depth study of chemical bonding with a focus on molecular geometry and hybridization of atomic orbitals, chemical kinetics, chemical equilibrium, acid-base equilibria, electrochemistry, an extended exploration of chemical elements including metals and non-metals (s-, p-, d-, f-block elements) and the introduction of organic chemistry</p>		
<b>Learning outcomes</b>	<p>On successful completion of this module, building on the knowledge gained in the fall semester, the students should be able to:</p> <p>Understand the periodic relationship among the elements</p> <ul style="list-style-type: none"> <li>- Extend knowledge of periodic trends and their impact on chemical behavior.</li> <li>- Explore advanced concepts related to atomic structure and its role in periodicity.</li> </ul> <p>Molecular Geometry and Advanced Bonding:</p> <ul style="list-style-type: none"> <li>- Expand understanding of chemical bonding, including advanced concepts of hybridization of atomic orbitals.</li> </ul> <p>Investigate chemical kinetics and equilibrium dynamics</p> <ul style="list-style-type: none"> <li>- Explore reaction mechanisms and rate-determining steps.</li> <li>- Understand the concept of equilibrium and the equilibrium constant</li> <li>- Investigate the relationship between chemical kinetics and chemical equilibrium</li> <li>- Apply Le Chatelier's principle to the chemical systems.</li> <li>- Explore acid-base equilibria and solubility equilibria</li> </ul> <p>Explore basic principles of electrochemistry</p> <ul style="list-style-type: none"> <li>- Deepen understanding of redox reactions.</li> <li>- Explore principles and applications of electrochemistry. Galvanic cells</li> </ul> <p>Explain and apply the chemical elements in the periodic groups</p> <ul style="list-style-type: none"> <li>- Realize difference between metals and non-metals</li> <li>- Define and explain s-, p-, d-, f- block elements</li> <li>- Understand their chemical and physical properties</li> </ul> <p>Introduce the fundamental concepts of organic chemistry</p> <ul style="list-style-type: none"> <li>- Define organic chemistry and its significance in the study of carbon-containing compounds and its nomenclature</li> </ul>		

	- Understand the structure and bonding of carbon atoms.
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Goldsby, K., &amp; Chang, R. (2015). <i>Chemistry</i>. McGraw-Hill Higher Education.</li> <li>2. Silberberg, M. S., Amateis, P., Venkateswaran, R., &amp; Chen, L. (2006). <i>Chemistry: The molecular nature of matter and change</i> (Vol. 4). New York: McGraw-Hill.</li> <li>3. Ryan, L., &amp; Norris, R. (2014). <i>Cambridge International AS and A Level Chemistry Coursebook with CD-ROM</i>. Cambridge University Press</li> </ol>
<b>Form of teaching</b>	Lecture (2 UoI) Recitation (2 UoI)
<b>Assessment methods</b>	Written examination (120 min) and academic performance
<b>Associated study programme</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	None
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination including two midterm exams and final exam accounting for 70%.

## BEP INF – Informatics /Spring/

<b>Module Title</b>	Informatics	<b>Module-Code</b>	BEP-INF
<b>Workload</b>	120h	<b>Contact hours</b>	48h
		<b>Individual study</b>	72h
<b>Module Coordinator</b>	E. Bold	<b>Language of Instruction</b>	English, Mongolian
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Fast typing: Explanation of touch typing and its benefits, proper finger placement on the keyboard, regular typing tests to measure progress, timed exercises to assess typing speed.</li> <li>2. Introduction to Microsoft Office: Overview of the Microsoft Office suite; understanding the common features and interface elements.</li> <li>3. Microsoft Word: Creating and formatting documents; working with text, fonts, and styles; inserting tables, images, and other elements; page layout and document organization, collaboration features.</li> <li>4. Microsoft Excel: Spreadsheet basics and terminology; entering and formatting data; formulas and functions for data analysis; creating charts and graphs; data validation and protection; PivotTables and PivotCharts.</li> <li>5. Microsoft PowerPoint: Creating and formatting presentations; working with slides, layouts, and themes; inserting multimedia elements (images, videos, audio); slide transitions and animations; presentation delivery tips.</li> <li>6. Others: Exam preparation tips and resources</li> </ol>		
<b>Learning Outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Fast typing: Touch typing mastery: Achieve proficiency in touch typing to enhance speed and accuracy; demonstrate proper finger placement on the keyboard for efficient typing; regularly participate in typing tests to measure progress and assess improvements in speed and accuracy.</li> <li>2. Proficiency in Microsoft Word: Create, format, and edit documents with proficiency; apply advanced formatting options; collaborate on documents effectively;</li> <li>3. Excel competency: Enter and manipulate data efficiently in Excel; create and use formulas and functions for data analysis; generate charts and graphs for effective data presentation.</li> <li>4. PowerPoint skills: Develop compelling presentations with professional design; incorporate multimedia elements seamlessly.</li> <li>5. Deliver presentations confidently.</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Susie H. VanHuss, Connie M. Forde, Donna L. Woo, "Keyboarding and Word Processing Essentials, Lessons 1-55", Cengage Learning, 20th (or later) edition</li> <li>2. David W. Beskeen, Carol M. Cram, Jennifer Duffy, Lisa Friedrichsen, Elizabeth Eisner Reding, "Microsoft Office 365 &amp; Office 2016: Introductory", Cengage Learning, 1st (or later) edition</li> <li>3. Joan Lambert, Curtis Frye, "Microsoft Word 2019 Step by Step", Microsoft Press, 1st (or later) Edition</li> </ol>		

	<ol style="list-style-type: none"> <li>4. Paul McFedries, "Microsoft Excel 2019 Formulas and Functions", Microsoft Press, 1st (or later) Edition</li> <li>5. Microsoft PowerPoint: Joan Lambert, "Microsoft PowerPoint 2019 Step by Step", Microsoft Press, 1st (or later) Edition</li> </ol>
<b>Form of teaching</b>	Recitation (4Uol)
<b>Assessment methods</b>	Module examination (written exam: 90-120 min) and academic performance (2 midterm exams, assignments, and 10-13 lab works)
<b>Associated study programme</b>	<ul style="list-style-type: none"> <li>B.Sc. Mechanical Engineering</li> <li>B.Sc. Raw Materials and Process Engineering</li> <li>B.Sc. Environmental Engineering</li> <li>B.Sc. Industrial Engineering</li> <li>B.Sc. Electrical Engineering</li> <li>B.Sc. Mechatronics</li> </ul>
<b>Prerequisites for participation</b>	None
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounted for 60% and the module examination accounted for 40%.



### BEP LNST1 – Learning strategies 1 /Fall/

<b>Module Title</b>	Learning strategies	<b>Module-Code</b>	BEP LNST1
<b>Workload</b>	60 h	<b>Contact hours</b>	24 h
		<b>Individual study</b>	36 h
<b>Module Coordinator</b>	Prof. Ch. Gunpilmaa, B. Nomindari	<b>Language of Instruction</b>	English
<b>Contents</b>	<p>The module aims at helping students to become motivated and strategic learners who effectively use learning strategies to enhance their learning and academic success. Participants will explore and practice various learning strategies and find out more about themselves as learners. The module includes the following topics:</p> <ol style="list-style-type: none"> <li>1. Motivation</li> <li>2. Self-organization (time management, learning conditions, concentration)</li> <li>3. Learning styles</li> <li>4. Collecting and organizing information</li> <li>5. Memorizing</li> <li>6. Cooperative learning</li> <li>7. Stress management and relaxation techniques</li> <li>8. Exam preparation and test taking</li> </ol>		
<b>Learning Outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. identify their strengths and weaknesses as learners and the obstacles to effective learning;</li> <li>2. describe different learning styles and identify their own;</li> <li>3. explain various learning techniques;</li> <li>4. apply these learning techniques effectively to their own learning process;</li> <li>5. understand the factors behind motivation and determine what motivates them;</li> <li>6. set goals and monitor their learning progress;</li> <li>7. monitor and regulate their time management and organization;</li> <li>8. prepare for exams purposefully and effectively;</li> <li>9. apply stress management techniques in order to diminish and handle exam anxiety;</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Dembo, M.H. (2004) Motivation and Learning Strategies for College Success. A Self-Management Approach, Lawrence Erlbaum Associates.</li> <li>2. Henne, G. (2014) General Skills I: Learning Techniques, Time- and Self- Management</li> </ol>		
<b>Form of teaching</b>	Recitation ( 2 UoI)		
<b>Assessment methods</b>	Assignments and in-class participation		

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<b>Associated study programme</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Electrical Engineering B.Sc. Mechatronics
<b>Prerequisites for participation</b>	B2 English level
<b>Grading system</b>	Pass or Fail

## BEP LNST2 – Learning strategies 2 /Spring/

<b>Module Title</b>	Learning strategies 2	<b>Module-Code</b>	BEP LNST2
<b>Workload</b>	60 h	<b>Contact hours</b>	24 h
		<b>Individual study</b>	36 h
<b>Module Coordinator</b>	Prof. Ch. Gunpilmaa, B. Nomindari	<b>Language of Instruction</b>	English
<b>Contents</b>	<p>The module aims at helping students achieve effective communication and become strategic learners who effectively use presentation skills to deliver their message and connect with the audience. Participants will explore and practice various presentation strategies. The module includes the following topics:</p> <ol style="list-style-type: none"> <li>1. Structuring a presentation</li> <li>2. Getting the audience's attention</li> <li>3. Presentation tools</li> <li>4. Creating effective visuals</li> <li>5. Describing graphs and charts</li> <li>6. Tips for describing trends</li> <li>7. 'Jump start' technique</li> <li>8. Feedback and targets</li> <li>9. Strategies for a good conclusion</li> <li>10. Handling the question and answer session</li> </ol>		
<b>Learning Outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. gain familiarity with types of presentations and various presentation techniques;</li> <li>2. plan a presentation, develop the content;</li> <li>3. be able to summarize facts and information in visually appealing ways;</li> <li>4. learn language of presentation;</li> <li>5. apply the presentation techniques effectively to their presentations;</li> <li>6. show confidence when presenting;</li> <li>7. work in a group discussion (team presentation) by taking roles to present the presentation;</li> <li>8. make presentations by group and individually;</li> </ol> <p>present the presentations;</p>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. English for Presentations Oxford Business English 2015</li> <li>2. Presentations in English Erica J.Williams Macmillan</li> <li>3. GMIT "Train the Trainer: Presentational Skills" April 2016, Ulaanbaatar Dr.Gudrun Henne CD</li> </ol>		
<b>Form of teaching</b>	Recitation ( 2 UoI)		
<b>Assessment methods</b>	Assignments and in-class participation		
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering          B.Sc. Raw Materials and Process Engineering          B.Sc. Environmental Engineering          B.Sc. Industrial Engineering          B.Sc. Electrical Engineering</p>		

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	B.Sc. Mechatronics
<b>Prerequisites for participation</b>	B2 English level
<b>Grading system</b>	Pass or Fail

## BEP – English Level B2

<b>Module Title</b>	English Level B2 Basic Engineering Program	<b>Module-Code</b>	
<b>Workload</b>	480 hours	<b>Contact hours</b>	192 hours
		<b>Individual study</b>	288 hours
<b>Module Coordinator</b>	D. Suvdanchuluun, Ch. Gunpilmaa, B.Nomindari, S. Uranchimeg	<b>Language of Instruction</b>	English
<b>Contents</b>	<p><b>Grammar Syllabus:</b> present tenses, adverbs of frequency, state verbs, future tenses, conditionals types 0 to 3, the definite article, -ing/-ed participles, verbs, making deductions question tags, causative form, reported speech, wishes, would rather</p> <p><b>Vocabulary and Topical Syllabus:</b> dwellings, travel, holidays, festivals, health, daily routines, shopping, advertising, sports and entertainment</p>		
<b>Learning Outcomes</b>	<p>By the end of the course, participants will be able to:</p> <ol style="list-style-type: none"> <li>1. express their opinions in discussion by providing relevant explanations, arguments and comments;</li> <li>2. correct mistakes if they have led to misunderstandings;</li> <li>3. understand the main ideas of complex texts in reading and what is said to them;</li> <li>4. comfortably communicate with other English speakers;</li> <li>5. produce clear, detailed text on many subjects;</li> <li>6. explain a viewpoint on a topic, including expressing advantages and disadvantages.</li> <li>7. write clear, detailed text on a wide range of subjects related to their interests;</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Virginia Evans-Jenny Dooley, Lynda Edwards, Upstream Advanced B2, Express Publishing 2005</li> <li>2. Virginia Evans, Lynda Edwards, Jenny Dooley, Upstream Advanced C1, Workbook, Express Publishing 2002</li> <li>3. Dictionary</li> </ol>		
<b>Form of teaching</b>	<p>Lecture (_____ Uol)</p> <p>Recitation (16 Uol)</p>		
<b>Assessment methods</b>	Written and oral		
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering          B.Sc. Raw Materials and Process Engineering          B.Sc. Environmental Engineering          B.Sc. Industrial Engineering          B.Sc. Electrical Engineering          B.Sc. Mechatronics</p>		
<b>Prerequisites for participation</b>	Placement test (students must have at least a low B2 level)		
<b>Grading system</b>	<p>Grading is based on a 100 point scale. In order to progress into a next level, students must achieve a minimum average of 60%.</p> <p>Classwork, homework, mid-term exam</p> <p>Final exam</p> <p><b>TOTAL</b></p>		<p><b>30</b></p> <p><b>70</b></p> <p><b>100</b></p>

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	Attendance will be recorded. The students are only eligible to take a final examination of the module if they attend at least 80% of the contact hours of the module.

## BEP – English Level B2 +

<b>Module Title</b>	English Level B2+ Basic Engineering Program	<b>Module-Code</b>	ENG 102
<b>Workload</b>	480 hours	<b>Contact hours</b>	192 hours
		<b>Individual study</b>	288 hours
<b>Module Coordinator</b>	D. Suvdanchuluun, Ch. Gunpilmaa, B.Nomindari, S. Uranchimeg	<b>Language of Instruction</b>	English
<b>Contents</b>	<p><b>Grammar Syllabus:</b> articles, tenses,- ing form or infinitive, reported speech, word formation, adjectives, adverbs, modal verbs, passive, causative, relative clauses</p> <p><b>Vocabulary and Topical Syllabus:</b> means of communication, moods and emotions, job skills and qualities, education system, green issues, healthy lifestyle</p>		
<b>Learning Outcomes</b>	<p>By the end of the course, participants will be able to:</p> <ol style="list-style-type: none"> <li>1. communicate effectively face-to-face, expressing opinions and presenting arguments;</li> <li>2. able to understand and correct his own mistakes;</li> <li>3. read a variety of authentic texts with ease;</li> <li>4. summarize a wide range of texts, discussing main themes;</li> <li>5. give a presentation that paraphrases information from simple academic texts;</li> <li>6. organize an essay, including an introduction with thesis, body paragraphs and a conclusion;</li> <li>7. write letters, reports, stories and lots of other types of text; integrate their reading, writing, and speaking skills to promote creative thinking and independent learning</li> </ol>		
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Virginia Evans-Jenny Dooley, Lynda Edwards, Upstream Upper Intermediate B2+, Express Publishing 2003</li> <li>2. Virginia Evans, Lynda Edwards, Jenny Dooley, Upstream Upper Intermediate B2+, Workbook, Express Publishing 2002</li> <li>3. Dictionary</li> </ol>		
<b>Form of teaching</b>	<p>Lecture ( _____ UoI)</p> <p>Recitation (16 UoI)</p>		
<b>Assessment methods</b>	Written and oral		
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering          B.Sc. Raw Materials and Process Engineering          B.Sc. Environmental Engineering          B.Sc. Industrial Engineering          B.Sc. Electrical Engineering          B.Sc. Mechatronics</p>		
<b>Prerequisites for participation</b>	Placement test (students must have at least a low B2 level)		
<b>Grading system</b>	<p>Grading is based on a 100 point scale. In order to progress into a next level, students must achieve a minimum average of 60%.</p> <p>Classwork, homework, mid-term exam</p>		
			<b>30</b>

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	<p>Final exam <b>70</b></p> <p><b>TOTAL 100</b></p> <p>Attendance will be recorded. The students are only eligible to take a final examination of the module if they attend at least 80% of the contact hours of the module.</p>
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## ELECTIVE MODULES

### GERL151 – German A1.1

<b>Module title</b>	Deutsch A1.1/ German A1.1			<b>Module code</b>	GERL151
<b>Duration</b>	1 semester	<b>Semester</b>	Fall	<b>Module start</b>	1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>Basic knowledge and skills in pronunciation, spelling (alphabet), intonation (word and sentence stress) of the German language.</p> <p>Main topics are first contact, classroom language, languages/ countries/ sights, jobs, living, time, numbers, making appointments, how to find the way in the city and in buildings, means of transport.</p> <p>Grammar problems, e.g. sentence structure (statements and questions), present tense of verbs, past tense of “haben” and “sein”, negation, articles, possessive pronoun, use of prepositions (place/time), cardinal numbers, dative and accusative cases, are introduced and practiced.</p> <p>Basic information about German geography and culture is introduced.</p>				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Know the basic principles of pronunciation, intonation, spelling of German.</li> <li>2. Construct grammatically and semantically correct sentences, produce simple statements and questions in oral communication as well as in writing.</li> <li>3. Introduce themselves and others and make themselves understood in the classroom.</li> <li>4. Talk about the geographical location of places and say where people work/study and ask for the way.</li> <li>5. Describe houses/apartments.</li> <li>6. Tell the time and make appointments.</li> <li>7. Apply integrated learning strategies to improve upon their learning independently.</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Funk/Kuhn. (2013) Studio 21. Das Deutschbuch. A1.1, Cornelsen Verlag.</li> <li>2. Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018) Panorama. Deutsch als Fremdsprache. Kursbuch A1 und Übungsbuch A1, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				
<b>Assessment method</b>	Written examination (90 min.) and academic performance (tests and homework assignments)				

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<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	C1 English level
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module ( 30%) and the module examination (70%).

## GERL152 – German A1.2

<b>Module title</b>	Deutsch A1.2/ German A1.2			<b>Module code</b>	GERL152
<b>Duration</b>	1 semester	<b>Semester</b>	Spring	<b>Module start</b>	2 <sup>nd</sup> , 4 <sup>th</sup> , 6 <sup>th</sup> , 8 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>Basic knowledge and skills in pronunciation, spelling, grammar and vocabulary of the German language as well as basic aspects of German culture.</p> <p>The main topics include: food/shopping, professions, daily routine/everyday life, holidays, seasons/weather, fashion, the human body/health.</p> <p>Grammar points include: modal verbs, perfect tense, comparison, adjectives, imperative and personal pronouns.</p> <p>In this module A1 (beginner) level is completed.</p>				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Pronounce and spell German words and intone sentences correctly.</li> <li>2. Construct grammatically and semantically correct sentences and make simple statements in oral communication as well as in writing.</li> <li>3. Understand simple everyday conversation and short and simple oral material.</li> <li>4. Talk about professions, clothes, the weather, the human body, feelings, food, holidays and daily routines.</li> <li>5. Give recommendations and write simple letters.</li> <li>6. Understand weather forecasts, recipes and various other short texts of different genres.</li> <li>7. Provide basic facts about Germany and German culture.</li> <li>8. Apply integrated learning strategies to improve upon their learning independently.</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Funk/Kuhn.(2013)Studio 21. Das Deutschbuch. A1.2, Cornelsen.</li> <li>2. Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018)Panorama. Deutsch als Fremdsprache. Kursbuch A1 und Übungsbuch A1, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				
<b>Assessment method</b>	Written examination (90 min.) and oral examination (15 min.) as well as academic performance (tests and homework assignments)				
<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering				

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	B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	Successful completion of the module German A1.1 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for (30%) and the module examination accounting for 70%.

## GERL251 – German A2.1

<b>Module title</b>	Deutsch A2.1/ German A2.1			<b>Module code</b>	GERL251
<b>Duration</b>	1 semester	<b>Semester</b>	Fall	<b>Module start</b>	1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>This module will pursue further work to improve students' skills in pronunciation and spelling as well as grammar and vocabulary.</p> <p>Language tasks will include: talking about one's self and one's family, describing people and pictures, extending invitations and congratulating people, expressing one's opinion, talking about trips and one's hobbies, describing one's emotions, discussing advertisements and the media, ordering food in a restaurant and explaining one's leisure time activities</p> <p>The grammar points covered in this module include: subordinate clauses with <i>weil</i>, <i>dass</i>, and <i>ob</i> comparative and superlative adjectives, possessive article and adjectives in the dative case, the genitive /s/, main clauses with <i>aber</i> and <i>oder</i>, the modal verb <i>sollen</i>, reflexive pronouns, adverbs of time, verbs with prepositions, indefinite pronouns, personal pronouns in the dative case.</p> <p>Further understanding of aspects of German culture</p>				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Apply their knowledge of German pronunciation, intonation and spelling to new words and sentences.</li> <li>2. Construct grammatically and semantically correct sentences at a basic level.</li> <li>3. Use proper vocabulary to discuss topics such as family, biography, languages, travelling, leisure and media.</li> <li>4. Produce written texts that go beyond the sentence level.</li> <li>5. Interact successfully and appropriately in everyday oral communication.</li> <li>6. Understand short oral texts.</li> <li>7. Grasp the meaning of various short written texts.</li> <li>8. Describe in more detail many aspects of German culture (e.g. migration, literature, geography).</li> <li>9. Apply integrated learning strategies to improve upon their learning independently</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Funk/Kuhn. (2015) Studio 21. Das Deutschbuch. A2.1, CornelsenVerlag.</li> <li>2. Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018) Panorama. Deutsch als Fremdsprache. Kursbuch 2 und Übungsbuch A2, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				

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<b>Assessment method</b>	Written examination (90 min.) and academic performance (tests and homework assignments)
<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	Successful completion of the module German A1.2 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for (30%) and the module examination accounting for 70%.

## GERL252 – German A2.2

<b>Module title</b>	Deutsch A2.2/ German A2.2			<b>Module code</b>	GERL252
<b>Duration</b>	1 semester	<b>Semester</b>	Spring	<b>Module start</b>	2 <sup>nd</sup> , 4 <sup>th</sup> , 6 <sup>th</sup> , 8 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>This module will pursue further work to improve students' skills in pronunciation and spelling as well as grammar and vocabulary.</p> <p>The language tasks of this module include: talking about moving from the countryside to the city; discussing various forms of culture, applying for a job and describing one's future career plans; celebrations and holidays; emotions and films; innovative ideas and inventions</p> <p>The grammar points covered in this module include: modal verbs in the past, adverbs of time, comparison of the preterite and perfect verb tenses, subordinate clauses with <i>wenn</i>, <i>als um...zu</i> and <i>damit</i>, the verb <i>werden</i>, nominalization, polite requests, prepositions and verbs with the dative case, verbs with accusative complements, genitive case, relative clauses with <i>in</i> and <i>mit</i>, <i>werden/wurden</i>. Acquisition of additional aspects of German culture. Completion of level A2 (elementary).</p>				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Correctly apply their knowledge in the pronunciation, intonation and spelling of German to new words and sentences.</li> <li>2. Construct grammatically complex and semantically correct sentences.</li> <li>3. Use proper vocabulary to discuss topics such as culture and arts, the workplace and professions, celebrations and holidays, country and city life and inventions and technology.</li> <li>4. Produce more complex written text.</li> <li>5. Interact effectively and appropriately in everyday speaking situations.</li> <li>6. Understand various types of short written texts.</li> <li>7. Grasp the core meaning of a variety of audio and video material of intermediate difficulty.</li> <li>8. Provide basic facts about German culture, geography and society.</li> <li>9. Apply integrated learning strategies to improve upon their learning independently.</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Funk/Kuhn. (2015) Studio 21. Das Deutschbuch. A2.2, Cornelsen.</li> <li>2. Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018) Panorama. Deutsch als Fremdsprache. Kursbuch A2 und Übungsbuch A2, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				
<b>Assessment method</b>	Written examination (90 min.) and oral examination (15 min.) as well as academic performance (tests and homework assignments)				
<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering				

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	B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	Successful completion of the module German A2.1 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination accounting for 70%.



## GERL351 – German B1.1

<b>Module title</b>	Deutsch B1.1/ German B1.1			<b>Module code</b>	GERL351
<b>Duration</b>	1 semester	<b>Semester</b>	Fall	<b>Module start</b>	1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	Development and application of the knowledge and skills acquired in the A1 and A2 levels. Additional topics include: German/European history, men/women, aspects of professional life and the education system. Grammar points include: subordinated sentences, past tense of irregular verbs, word formation and conditional forms.				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Interact adequately in most situations of everyday life.</li> <li>2. Speak in a simple but well-structured way about topics like politics, history, and culture.</li> <li>3. Give recommendations; agree or disagree; express their opinion and give reasons.</li> <li>4. Describe dreams, wishes and goals; and report about experiences and events.</li> <li>5. Read and understand short newspaper articles.</li> <li>6. Write texts on a number of everyday topics that consist of several paragraphs and employ cohesive structures to organize the text as a whole.</li> <li>7. Deliver short presentations on a number of topics related to everyday life, history and culture.</li> <li>8. Understand everyday conversations as well as audio and video material of intermediate difficulty.</li> <li>9. Apply integrated learning strategies to improve upon their learning independently.</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Funk/Kuhn/Winzer-Kiontke. (2015) <i>Studio 21. Das Deutschbuch. B1.1</i>, Cornelsen Verlag.</li> <li>2. Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018) <i>Panorama. Deutsch als Fremdsprache. Kursbuch B1 und Übungsbuch B1</i>, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				
<b>Assessment method</b>	Written examination (120 min.) and academic performance (tests and homework assignments)				
<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering				

<b>Prerequisites for participation</b>	Successful completion of the module German A2.2 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination accounting for 70%.

## GERL352 – German B1.2

<b>Module title</b>	Deutsch B1.2/ German B1.2			<b>Module code</b>	GERL352
<b>Duration</b>	1 semester	<b>Semester</b>	Spring	<b>Module start</b>	2 <sup>nd</sup> , 4 <sup>th</sup> , 6 <sup>th</sup> , 8 <sup>th</sup>
<b>Credit points</b>	3CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>Development and application of the knowledge and skills acquired in the A1 and A2 levels. Additional topics include: climate/environment, conflicts, generations and age, migration and (European) politics.</p> <p>Grammar points include: future and past perfect tense, genitive case, conjunctions and subordinated sentences, word formation and phrasal verbs. Completion of level B1 (intermediate).</p>				
<b>Learning outcomes</b>	<p>On successful completion of this module, the students should be able to:</p> <ol style="list-style-type: none"> <li>Interact adequately and appropriately in all situations of everyday life.</li> <li>Speak and write in a simple but well-structured way about topics like climate change and the environment, politics, history and culture.</li> <li>Express their opinion and give reasons as well as provide arguments.</li> <li>Talk about advantages and disadvantages, give alternatives, comment on various topics of intermediate difficulty.</li> <li>Express their problems, fears and hopes both orally and in writing.</li> <li>Understand and write basic literary texts.</li> <li>Grasp the meaning of a variety of discursive texts of intermediate difficulty.</li> <li>Understand conversations as well as authentic audio and video material on a number of topics of intermediate difficulty.</li> <li>Give presentations.</li> <li>Apply integrated learning strategies to improve upon their learning independently.</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>Funk/Kuhn/Winzer-Kiontke. (2015) Studio 21. Das Deutschbuch. B1.2, Cornelsen Verlag, 2015 (tests and homework assignments).</li> <li>Falch/Paar-Grünbichler/Winzer-Kiontke/Finster/Jin. (2018) Panorama. Deutsch als Fremdsprache. Kursbuch B. und Übungsbuch B1, Cornelsen Verlag.</li> </ol>				
<b>Form of teaching</b>	Recitation (4UoI)				
<b>Assessment method</b>	Written examination (120 min.) and oral examination (15 min.) as well as academic performance				
<b>Associated study program</b>	B.Sc. Mechanical Engineering B.Sc. Raw Materials and Process Engineering B.Sc. Environmental Engineering				

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	B.Sc. Industrial Engineering B.Sc. Energy and Electrical Engineering B.Sc. Mechatronics Engineering
<b>Prerequisites for participation</b>	Successful completion of the module German B1.1 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module
<b>Grading system</b>	The final grade consists of the academic performance during the module accounting for 30% and the module examination accounting for 70%.

## GERL451 – German B2.1

<b>Module Title</b>	Deutsch B2.1/German B2.1			<b>Module-Code</b>	GERL451
<b>Duration</b>	1 semester	<b>Semester</b>	Fall semester	<b>Module-Start</b>	1, 3, 5, 7
<b>Credit Points</b>	3 CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>Development and application of the knowledge and skills acquired at A1, A2 and B1 levels. Additional topics include: Language learning methods live and work in big cities, digital worlds and climate change.</p> <p>Grammar points include: conjunctions and subordinated sentences, passive forms with modal verbs, relative clauses, word formation and conditional are introduced or revised.</p>				
<b>Learning Outcomes</b>	<p>Upon successful completion of this module, students are able to:</p> <ol style="list-style-type: none"> <li>1. understand the main and detail ideas of complex texts on concrete and abstract topics;</li> <li>2. communicate so spontaneously and fluently that a normal conversation with native speakers is easily possible without much effort on either side.</li> <li>3. produce clear, detailed text on a wide range of subjects, explaining a point of view on a topical issue giving the advantages and disadvantages of various options.</li> <li>4. reflect the structure of emails and write emails with link forms</li> <li>5. compare and comment on information</li> <li>6. interpret graphics</li> <li>7. Arrange sections of text logically and arguing</li> <li>8. write a structured statement</li> <li>9. respond to speeches and conduct discussions</li> <li>10. summarize articles in writing and orally</li> <li>11. write formal emails</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Birgit Braun/Fügert/Jin/Mautsch/Sander/Schäfer/Schmeiser. (2020) Kompass DaF B2.1 Deutsch für Studium und Beruf. Das Kurs-und Übungsbuch. B2.1, Ernst Klett Sprachen Verlag .</li> </ol>				
<b>Form of teaching</b>	Recitation (4 UoI)				
<b>Assessment methods</b>	Written examination (120 min.) and academic performance (tests and homework assignments)				
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering  B.Sc. Raw Materials and Process Engineering  B.Sc. Environmental Engineering  B.Sc. Industrial Engineering  B.Sc. Energy and Electrical Engineering  B.Sc. Mechatronics Engineering</p>				

<b>Prerequisites for participation</b>	Successful completion of the module German B1.2 or equivalent knowledge of German
<b>Requirements for receiving credit points</b>	Passing the module.
<b>Grading system</b>	The final grade consists of the academic performance during the module accounted for 30% and the module examination accounted for 70%

## GERL452 – German B2.2

<b>Module Title</b>	Deutsch B2.2/German B2.2			<b>Module-Code</b>	GERL452
<b>Duration</b>	1 semester	<b>Semester</b>	Spring semester	<b>Module-Start</b>	2, 4, 6, 8
<b>Credit Points</b>	3 CP	<b>Workload</b>	90 h	<b>Contact hours</b>	48 h
				<b>Individual study</b>	42 h
<b>Module coordinator</b>	Batsuren B. Bolormaa B.			<b>Language</b>	German
<b>Content</b>	<p>Development and application of the knowledge and skills acquired at A1, A2 and B1 levels. Additional topics include: education/dual system, healthy foods/eating, sports/health insurance, motivation and praise and intercultural Competence.</p> <p>Grammar points include: conjunctions and subordinated sentences, indirect speech Subjunctive I, modal sentences, Partizip I and II-forms as an adjective, unreal conditions, unreal comparison sentences, word formation and phrasal verbs are introduced or revised. Completion of level B2 (Upper-Intermediate).</p>				
<b>Learning Outcomes</b>	<p>Upon successful completion of this module, students are able to:</p> <ol style="list-style-type: none"> <li>1. reflect/recognize the structure of emails and use emails with link forms</li> <li>2. compare and comment on information</li> <li>3. interpret graphics</li> <li>4. arrange texts logically and argue</li> <li>5. write a structured statement</li> <li>6. respond to speeches and conduct discussions</li> <li>7. summarize articles in writing and orally</li> <li>8. write formal emails</li> </ol>				
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Birgit Braun/Fügert/Jin/Mautsch/Sander/Schäfer/Schmeiser. Kompass DaF B2.2 Deutsch für Studium und Beruf. Das Kurs-und Übungsbuch. B2.1, Ernst Klett Sprachen Verlag, 2020.</li> </ol>				
<b>Form of teaching</b>	Recitation (4 UoI)				
<b>Assessment methods</b>	Written examination (120 min.) and oral examination (15 min.) as well as academic performance (tests and homework assignments)				
<b>Associated study programme</b>	<p>B.Sc. Mechanical Engineering          B.Sc. Raw Materials and Process Engineering          B.Sc. Environmental Engineering          B.Sc. Industrial Engineering          B.Sc. Energy and Electrical Engineering          B.Sc. Mechatronics Engineering</p>				
<b>Prerequisites for participation</b>	Successful completion of the module German B2.1 or equivalent knowledge of German				

<b>Requirements for receiving credit points</b>	Passing the module.
<b>Grading system</b>	The final grade consists of the academic performance during the module accounted for 30% and the module examination accounted for 70%