Bachelor's Educational Program	
Energy and Electrical Engineering	
	Program Credit Capacity(ECTS)
	240
	Qualification to be awarded
	Bachelor of Energy and Electrical Engineering
	The language of instruction
	Georgian
	The aim of the program Prepare competitive staff on the free market of energy and electrical engineering, for which it is necessary: To study electric power generation technologies in hydro and thermal power plants. To deliver high-voltage network of high-voltage electricity to a long distance, to acquire the knowledge of its distribution among the consumers, the regulation of parameters of electric regimes and the control of electrical systems. Mastering installation, deployment, testing, exploitation and repair skills of energy equipment and facilities. Study methods of improving ecological and economic aspects of energy, energy non-traditional sources of energy, energy efficiency technologies and energy system reliability.
	Learning outcomes of the educational program
	Knowledge and understanding – Has versatile and/or specialized theoretical and practical knowledge of the field of energy and electrical engineering. Has realized the possibilities of professional activity. Has a wide knowledge of fields of energy and electrical engineering, including critical understanding of theories and principles. Knows the main principles of the field, including complex issues, in particular, designing, installation, testing, diagnostics, repair, operational conditions and processes of energy equipment. Knows the rules and norms of labor protection, safety equipment, industrial sanitation and fire protection. Knows proper terminology, apprehends connection between the energy sector structure and energy subdivisions. Understands the need to deepen knowledge. **The ability to apply knowledge into practice –** Has cognitive and practical skills of solving a wide range of abstract problems in the field of energy and electrical engineering in a creative way. Has the ability to perform professional functions. Has the ability to identify complex problems in the field of energy and solve them according to the predetermined instructions. Has ability to install, exploit, repair, and replace operational parameters of electric equipment and facilities, to register energy consumption and quality control, to read technical documentation, draft drawings and schemes. **Making judgment –** Has the ability to identify the distinctive problems peculiar to fields of energy and electrical engineering and to find appropriate data for their solution. Has the ability: to collect and explain data peculiar to the field, as well as make situation analysis of the abstract data and situation by using standard and some distinguished methods; To make a reasoned conclusion on the technical condition and working condition of the equipment, networks and systems; To formulate basic technical and economic requirements; To evaluate the power quality parameters supplied to the customer and regulate these parameters; **Communication skills –** Has the ability to transmit ideas and information in the structured and consistent way to the energy engineers and other specialists by using qualitative and quantitative information. Has ability: to write and submit the written and oral report on the problems in the field and sub-field of energy and electrical engineering, in particular thermal and hydro power plants, energy

	system and other energy equipment; To use modern information and communication technologies in the creative way; to collect, process, save and transfer information (SCADA and others) by means of energy system management programs; To participate in the discussion at the professional level and prepare detailed and completed written report of the project. **Learning skills –** Has ability to determin his/her learning directions in a changing and unexpected situation; Select and extend studies of the power system and the electrical engineering by elective blocks. Has the ability: to manage his/her learning process under minimum guidance; To determine further learning needs and make multilateral evaluation; To determine the directions of his/her studies in order to enrich professional knowledge and experience in the field of energy and electrical engineering. To choose thematic of master's thesis relevant to energy and electrical engineering based on the knowledge gained in Bachelor's educational program. **Values –** Has knowledge of principles and values of energy and electrical engineering. Has ability to evaluate his/her and other's attitude (the authenticity, punctuality, objectivity, transparency, organization, etc.) towards professional activities of fields and sub-fields of energy and electrical engineering; To participate in the formation of values and strive for their maintenance; To protect norms of professional values, ethics and moral.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: • weekly assessment; Maximum score o 30 points; • Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. • Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses
	Contact person: Prof. Gia Arabidze Tel. 599752458 E-mail: power@gtu.ge; Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St.

	77, 0175, Tbilisi

Bachelor's Educational Program	
Energy and Electrical Engineering	
	Program Credit Capacity(ECTS)
	240
	Qualification to be awarded
	Bachelor of Energy and Electrical Engineering
	The language of instruction
	Russian
	The aim of the program Prepare competitive staff on the free market of energy and electrical engineering, for which it is necessary: To study electric power generation technologies in hydro and thermal power plants. To deliver high-voltage network of high-voltage electricity to a long distance, to acquire the knowledge of its distribution among the consumers, the regulation of parameters of electric regimes and the control of electrical systems. Mastering installation, deployment, testing, exploitation and repair skills of energy equipment and facilities. Study methods of improving ecological and economic aspects of energy, energy non-traditional sources of energy, energy efficiency technologies and energy system reliability.
	Learning outcomes of the educational program
	Knowledge and understanding – Has versatile and/or specialized theoretical and practical knowledge of the field of energy and electrical engineering. Has realized the possibilities of professional activity. Has a wide knowledge of fields of energy and electrical engineering, including critical understanding of theories and principles. Knows the main principles of the field, including complex issues, in particular, designing, installation, testing, diagnostics, repair, operational conditions and processes of energy equipment. Knows the rules and norms of labor protection, safety equipment, industrial sanitation and fire protection. Knows proper terminology, apprehends connection between the energy sector structure and energy subdivisions. Understands the need to deepen knowledge. **The ability to apply knowledge into practice –** Has cognitive and practical skills of solving a wide range of abstract problems in the field of energy and electrical engineering in a creative way. Has the ability to perform professional functions. Has the ability to identify complex problems in the field of energy and solve them according to the predetermined instructions. Has ability to install, exploit, repair, and replace operational parameters of electric equipment and facilities, to register energy consumption and quality control, to read technical documentation, draft drawings and schemes. **Making judgment –** Has the ability to identify the distinctive problems peculiar to fields of energy and electrical engineering and to find appropriate data for their solution. Has the ability: to collect and explain data peculiar to the field, as well as make situation analysis of the abstract data and situation by using standard and some distinguished methods; To make a reasoned conclusion on the technical condition and working condition of the equipment, networks and systems; To formulate basic technical and economic requirements; To evaluate the power quality parameters supplied to the customer and regulate these parameters; **Communication skills –** Has the ability to transmit ideas and information in the structured and consistent way to the energy engineers and other specialists by using qualitative and quantitative information. Has ability: to write and submit the written and oral report on the problems in the field and sub-field of energy and electrical engineering, in particular thermal and hydro power plants, energy system and other energy equipment; To use modern information and communication technologies in

	the creative way; to collect, process, save and transfer information (SCADA and others) by means of energy system management programs; To participate in the discussion at the professional level and prepare detailed and completed written report of the project. **Learning skills –** Has ability to determin his/her learning directions in a changing and unexpected situation; Select and extend studies of the power system and the electrical engineering by elective blocks. Has the ability: to manage his/her learning process under minimum guidance; To determine further learning needs and make multilateral evaluation; To determine the directions of his/her studies in order to enrich professional knowledge and experience in the field of energy and electrical engineering. To choose thematic of master's thesis relevant to energy and electrical engineering based on the knowledge gained in Bachelor's educational program. **Values –** Has knowledge of principles and values of energy and electrical engineering. Has ability to evaluate his/her and other's attitude (the authenticity, punctuality, objectivity, transparency, organization, etc.) towards professional activities of fields and sub-fields of energy and electrical engineering; To participate in the formation of values and strive for their maintenance; To protect norms of professional values, ethics and moral.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: • weekly assessment; Maximum score o 30 points; • Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. • Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses
	Contact person: Prof. Gia Arabidze Tel. 599752458 E-mail: power@gtu.ge; Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Master's Educational Program
Energy and Electrical Engineering
Program Credit Capacity(ECTS)
120
Qualification to be awarded
Master of Energy and Electrical Engineering with the specialization of the relevant chosen master topic: a) Master of Energy and Electrical Engineering with Thermal Power Energy Specialty b) Master of Energy and Electrical Engineering with Hydro Power Energy Specialty c) Master of Energy and Electrical Engineering with Electric Energy Specialty d) Master of Energy and Electrical Engineering with Electric Technique and Industrial Electronic Specialty e) Master of Energy and Electrical Engineering with Electric mechanic Specialty
The language of instruction
Georgian
The aim of the program The master's program aims: to prepare the specialists with wide and enhanced knowledge required for organizational-normative and industrial-technological activities, who meet the requirements of the market in the fields of energy and electrical engineering and subfields, in particular: thermal energy, hydro power engineering, electric power engineering, electromechanics, electro-technics and electronics. The program gives students the fundamental knowledge in the energy production, transmission, distribution and transformation technologies. Develops the skills of quantitative assessments, energy problems analysis, forecasting, capital investment and cost calculation, environmental impact assessment, effective planning and management.
Learning outcomes of the educational program
Knowledge and understanding - has deep and systematic knowledge based on research in energy and electrical engineering. Apprehends the specific problems peculiar to the field and subfield and the ways of their solution. Knows - issues of utilization of hydro resources / non-traditional renewable energy sources; Technologies of transforming hydro / thermal energy into mechanical and electrical energy; Problems of transmission and distribution of electrical / thermal energy; Principles of action of energy systems, prospects of technical development and peculiarities of functioning; Designing, installation, exploitation and repair of modern energy technological appliances and complexes; International standards, regulations, normative and other manual materials relevant to the professional activities; Basics of management and marketing of energy and electrical engineering; **Ability to apply knowledge into practice –** Has ability to: act in a new, unforeseen and multidisciplinary environment; To solve a complex problem independently, in the original way; Control and optimize working regimes of existing equipment and systems in the field and subfields of energy and electrical engineering (thermal energy / hydro energy / electric power engineering / electromechanics / electro-technics and electronics); Model the processes in exploitation and emergency situations, calculation-assessment of work sustainability based on modern methods. Plan and implement tasks independently on a professional level; Process the research and observation results, understand and analyse the data given in the literature; Develop and implement entrepreneurial projects. **Making Judgment –** Has ability to: provide a critical approach to information innovative synthesis by using the latest data in the field and subfields of energy and electrical engineering (thermal energy / hydro energy / electric power engineering / electromechanics / electro-technics and electronics). Analyse results obtained based on fundamental and applied researches. Develop generalized versions of solving problems, caused by unsustainable work of energy system and power engineering technological appliances, their analysis, prediction of results, making solutions and realization of project. Develop an opinion based on incomplete and limited information, define problems. **Communication skills –** Has ability to: communicate in native and foreign languages on the processes

	happening in the field and subfields of energy and electrical engineering at academic and professional level. Conduct bibliographic works using modern information technologies; Present the results of the conducted work in the form of reports, summaries, article: prepare detailed written report; Transmit information to specialists and non-specialists in the oral form. **Learning skills –** Study independently, apprehend the peculiarities of the learning process and plan strategically. Determine the directions of his/her learning direction to enhance professional knowledge and experience; Is prepared to pursue studies in doctoral studies in energy and related directions. **Values –** evaluate his/her and other person's attitude towards values and contribute to the establishment of new values; Protect accepted norms of professional values, ethics and morals. Knows the ethical and legislative norms on the basis of which he/she should act in the society and in the company. Is responsible for ecological problems of environmental protection.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: • weekly assessment; Maximum score o 30 points; • Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. • Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses
	Contact person: Prof. Tengiz Jishkariani Tel. 593790084 E-mail: t.jishkariani@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Master's Educational Program
Energy and Electrical Engineering
Program Credit Capacity(ECTS)
120
Qualification to be awarded
Master of Energy and Electrical Engineering with the specialization of the relevant chosen master topic: f) Master of Energy and Electrical Engineering with Thermal Power Energy Specialty g) Master of Energy and Electrical Engineering with Hydro Power Energy Specialty h) Master of Energy and Electrical Engineering with Electric Energy Specialty i) Master of Energy and Electrical Engineering with Electric Technique and Industrial Electronic Specialty j) Master of Energy and Electrical Engineering with Electric mechanic Specialty
The language of instruction
Russian
The aim of the program The master's program aims: to prepare the specialists with wide and enhanced knowledge required for organizational-normative and industrial-technological activities, who meet the requirements of the market in the fields of energy and electrical engineering and subfields, in particular: thermal energy, hydro power engineering, electric power engineering, electromechanics, electro-technics and electronics. The program gives students the fundamental knowledge in the energy production, transmission, distribution and transformation technologies. Develops the skills of quantitative assessments, energy problems analysis, forecasting, capital investment and cost calculation, environmental impact assessment, effective planning and management.
Learning outcomes of the educational program
Knowledge and understanding - has deep and systematic knowledge based on research in energy and electrical engineering. Apprehends the specific problems peculiar to the field and subfield and the ways of their solution. Knows - issues of utilization of hydro resources / non-traditional renewable energy sources; Technologies of transforming hydro / thermal energy into mechanical and electrical energy; Problems of transmission and distribution of electrical / thermal energy; Principles of action of energy systems, prospects of technical development and peculiarities of functioning; Designing, installation, exploitation and repair of modern energy technological appliances and complexes; International standards, regulations, normative and other manual materials relevant to the professional activities; Basics of management and marketing of energy and electrical engineering; **Ability to apply knowledge into practice –** Has ability to: act in a new, unforeseen and multidisciplinary environment; To solve a complex problem independently, in the original way; Control and optimize working regimes of existing equipment and systems in the field and subfields of energy and electrical engineering (thermal energy / hydro energy / electric power engineering / electromechanics / electro-technics and electronics); Model the processes in exploitation and emergency situations, calculation-assessment of work sustainability based on modern methods. Plan and implement tasks independently on a professional level; Process the research and observation results, understand and analyse the data given in the literature; Develop and implement entrepreneurial projects. **Making Judgment –** Has ability to: provide a critical approach to information innovative synthesis by using the latest data in the field and subfields of energy and electrical engineering (thermal energy / hydro energy / electric power engineering / electromechanics / electro-technics and electronics). Analyse results obtained based on fundamental and applied researches. Develop generalized versions of solving problems, caused by unsustainable work of energy system and power engineering technological appliances, their analysis, prediction of results, making solutions and realization of project. Develop an opinion based on incomplete and limited information, define problems. **Communication skills –** Has ability to: communicate in native and foreign languages on the processes

	happening in the field and subfields of energy and electrical engineering at academic and professional level. Conduct bibliographic works using modern information technologies; Present the results of the conducted work in the form of reports, summaries, article: prepare detailed written report; Transmit information to specialists and non-specialists in the oral form. **Learning skills –** Study independently, apprehend the peculiarities of the learning process and plan strategically. Determine the directions of his/her learning direction to enhance professional knowledge and experience; Is prepared to pursue studies in doctoral studies in energy and related directions. **Values –** evaluate his/her and other person's attitude towards values and contribute to the establishment of new values; Protect accepted norms of professional values, ethics and morals. Knows the ethical and legislative norms on the basis of which he/she should act in the society and in the company. Is responsible for ecological problems of environmental protection.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: ・weekly assessment; Maximum score o 30 points; ・Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. ・Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses
	Contact person: Prof. Tengiz Jishkariani Tel. 593790084 E-mail: t.jishkariani@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Doctoral Educational Program
Energy and Electrical Engineering
Program Credit Capacity(ECTS)
180
Qualification to be awarded
Doctor in Energy and Electrical Engineering
The language of instruction
Georgian
The aim of the program The aim of the doctoral program is to prepare the doctor equipped with wide and enhanced knowledge, systematic vision of problems, based on fundamental research required for scientific-research, project-construction, manufacturing-technological, organizational-management and educational fields.
Learning outcomes of the educational program
Knowledge and understanding - knowledge based on the latest achievements in the field of production, transmission, distribution and consumption of electric and thermal energy, that enable to extend the existing knowledge or use innovative methods (at the standard level required for a rrefereed publication). Through re-thinking and partial re-evaluation of the knowledge in the field of energy and electrical engineering, the doctoral candidate will apprehend the renewed scope of knowledge; **Ability to apply knowledge into practice –** Plans independently, implement and superve innovative research in the field of energy and electrical engineering; Develops new research and analytical methods and approaches oriented on the creation of new knowledge in the field of production, transmission, distribution and consumption of electric and thermal energy that can be reflected in international refereed publications. **Making judgments** - will have ability of critical analysis, synthesis and evaluation of new, complex and contradictory ideas and approaches in the field of energy and electrical engineering. Will have ability to make the right and effective decision for solving problems in the process of production, transmission, distribution and consumption of electric and thermal energy; **Communication skills –** will have ability to provide a reasonable, clear and effective presentation of complex and controversial information, to get involved in the thematic polemic with the international scientific community on the basis of accumulated and newly gained knowledge in the different fields of energy and electrical engineering; **Learning skills –** Based on the knowledge of latest achievements in the energy sector, will have ability to develop and implement new ideas in the process of creation of sustainable and efficient energy base in Georgia, optimal management and development of energy systems and facilities, in the process of elaborating energy policy and its gradual implementation. **Values –** Has ability to evaluate his/her own and others attitudes towards values and contribute to the establishment of new values. Observe norms of professional values, ethics and moral, which is necessary condition to establish close contacts, have relation and achieve consent and unanimity with company executives, technical personnel, investment and commercial banks, business circles, municipal bodies, state structures and public representatives, international and local organizations, partners, etc.;
Assessment system
Assessment system is based on a 100-point system. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points

	(D) - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment of doctoral thesis is based on 100 point system: a) Excellent (summa cum laude) - excellent work b) Very good (magna cum laude) - the result is above all requirements; c) Good (cum laude) - the result exceeds the requirements; d) Average (bene) - the result meets all the requirements; e) Satisfactory (rite) - the result meets the requirements despite the shortcomings, f) Inadequate (insufficienter) - the result does not meet the set-out requirements due to significant shortcomings; g) Completely unsatisfactory (sub omni canone) - the result does not meet requirements. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in assessment rules of teaching and research components of Doctoral Educational Program.
	Contact person: Prof. Tengiz Jishkariani Tel. 593790084 E-mail: t.jishkariani@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Bachelor's Educational Program	
Telecommunication	
	Program Credit Capacity(ECTS)
	240
	Qualification to be awarded
	Bachelor of Engineering in Telecommunication
	The language of instruction
	Georgian
	The aim of the program The aim of the program is: to prepare competitive staff on the free market in the field of telecommunication, whose professional activities are related to the technological systems and technical means by which radiation, transmission and reception of sound, data and image signals are performed by radio, wired, optical or other systems; To equip with installation, deployment, testing, exploitation and repair skills of telecommunication equipment; To study their ecological and economic aspects and improvement methods; To study the types of technologies and services that coincide with the world trends of telecommunication development in terms of distribution.
	Learning outcomes of the educational program
	Knowledge and understanding: Has wide knowledge of telecommunication fields, including the critical understanding of theories and principles, the ability to perform professional functions, to use labor legislation and basics of labor protection. Have understanding of complex issues of telecommunication theory and techniques and the main trends of development of the field; Has the ability to observe the requirements, operating norms, rules and standards established for the operation of telecommunication facilities; Has wide knowledge of theoretical basics and action principles of Schemo-technical designing, calculation and building of communication nodes, systems and equipment of analog and discrete notification, data transmission and telephone communication networks, channel-generating and converting devices, electronic control complexes, mobile communication systems. Basics of multichannel and radio relay communication; Basics of telecommunication systems, electric acoustics and electrical communication devices; Knows the principles of construction and operation of multilayer transmission systems, terrestrial and satellite radio communications, radio and television broadcasting, receiver-transmitters and satellite-sophistication techniques; Theoretical possibilities and build principles of gathering, processing, storage and transmission of information; Methods of information security and protection of information from unauthorized inclusion. Has the ability to apply labor legislation and the basis of labor protection. **Ability to apply knowledge into practice:** has the ability To process rules of the telecommunications networks, information processing equipment, consideration of processes in the systems and their technical exploitation; To operate and deliver service of telecommunication systems and equipment; To participate in experimental, research, installation and commissioning works; To measure telecommunication equipment, channels and traits and to process the measurement results; To exploit specific technical facilities based on the initial skills acquired during the educational process; To work in accordance with qualification requirements of telecommunication and radio engineering-enterprises. **Making judgments:** Ability to formulate basic technical and economic requirements for designing objects and systems; Ability to develop technical, methodical and normative documentation for production, as well as

	proposals for realization of these documents; Ability to participate in the processing and design of networks and systems for transmission, reception and distribution of information; Ability to use the methods of telecommunication theory in adjacent directions of information technologies. **Communication skill:** Prepare a detailed written report on ideas, existing problems and ways of their solution in a clear and grammatical manner; Participate in the process of testing equipment and machinery in their exploitation process and the techniques related to the standardization of technical means, systems and processes, analyzing the production information through computer techniques and informing the staff on the obtained results. Use information-communication technological resources effectively. **Ability to learn:** Bachelor of Engineering with specialization in Telecommunication is prepared: To continue studies on Master's degree, especially in the direction of telecommunication, electro-technical and applied mathematics; Successful and multilateral assessment of his/her own learning process and identification of further learning needs; **Values:** Bachelor has the basic knowledge of humanitarian sciences, know the ethical and legislative norms, that are important for being part of the society; Has responsibility of environmental protection; Has a culture of thinking that can organize his work on a scientific basis and acquire new knowledge achieved in the field; Has ability to assess his work critically and seeks to gain new knowledge in the field; Bachelor has the ability to understand the necessity of social responsibility and civil self-consciousness; The bachelor has the ability to evaluate his own performance critically.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: ・weekly assessment; Maximum score o 30 points; ・ Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points.

	• Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses)
	Contact person: Prof. Tamaz Kupatadze Tel. 577402626 Email: tamazk@hotmail.com; Prof. Viktor Nanobashvili Tel: 599151115 Email: v.nanobashvili@gtu.ge Prof. Janiko Khuntsaria Tel: 595450093 Email: j.khuntsaria@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Bachelor's Educational Program	
Telecommunication	
	Program Credit Capacity(ECTS)
	240
	Qualification to be awarded
	Bachelor of Engineering in Telecommunication
	The language of instruction
	Russian
	The aim of the program The aim of the program is: to prepare competitive staff on the free market in the field of telecommunication, whose professional activities are related to the technological systems and technical means by which radiation, transmission and reception of sound, data and image signals are performed by radio, wired, optical or other systems; To equip with installation, deployment, testing, exploitation and repair skills of telecommunication equipment; To study their ecological and economic aspects and improvement methods; To study the types of technologies and services that coincide with the world trends of telecommunication development in terms of distribution.
	Learning outcomes of the educational program
	Knowledge and understanding: Has wide knowledge of telecommunication fields, including the critical understanding of theories and principles, the ability to perform professional functions, to use labor legislation and basics of labor protection. Have understanding of complex issues of telecommunication theory and techniques and the main trends of development of the field; Has the ability to observe the requirements, operating norms, rules and standards established for the operation of telecommunication facilities; Has wide knowledge of theoretical basics and action principles of Schemo-technical designing, calculation and building of communication nodes, systems and equipment of analog and discrete notification, data transmission and telephone communication networks, channel-generating and converting devices, electronic control complexes, mobile communication systems. Basics of multichannel and radio relay communication; Basics of telecommunication systems, electric acoustics and electrical communication devices; Knows the principles of construction and operation of multilayer transmission systems, terrestrial and satellite radio communications, radio and television broadcasting, receiver-transmitters and satellite-sophistication techniques; Theoretical possibilities and build principles of gathering, processing, storage and transmission of information; Methods of information security and protection of information from unauthorized inclusion. Has the ability to apply labor legislation and the basis of labor protection. **Ability to apply knowledge into practice:** has the ability To process rules of the telecommunications networks, information processing equipment, consideration of processes in the systems and their technical exploitation; To operate and deliver service of telecommunication systems and equipment; To participate in experimental, research, installation and commissioning works; To measure telecommunication equipment, channels and traits and to process the measurement results; To exploit specific technical facilities based on the initial skills acquired during the educational process; To work in accordance with qualification requirements of telecommunication and radio engineering-enterprises. **Making judgments:** Ability to formulate basic technical and economic requirements for designing objects and systems; Ability to develop technical, methodical and normative documentation for production, as well as

	proposals for realization of these documents; Ability to participate in the processing and design of networks and systems for transmission, reception and distribution of information; Ability to use the methods of telecommunication theory in adjacent directions of information technologies. **Communication skill:** Prepare a detailed written report on ideas, existing problems and ways of their solution in a clear and grammatical manner; Participate in the process of testing equipment and machinery in their exploitation process and the techniques related to the standardization of technical means, systems and processes, analyzing the production information through computer techniques and informing the staff on the obtained results. Use information-communication technological resources effectively. A**bility to learn:** Bachelor of Engineering with specialization in Telecommunication is prepared: To continue studies on Master's degree, especially in the direction of telecommunication, electro-technical and applied mathematics; Successful and multilateral assessment of his/her own learning process and identification of further learning needs; **Values:** Bachelor has the basic knowledge of humanitarian sciences, know the ethical and legislative norms, that are important for being part of the society; Has responsibility of environmental protection; Has a culture of thinking that can organize his work on a scientific basis and acquire new knowledge achieved in the field; Has ability to assess his work critically and seeks to gain new knowledge in the field; Bachelor has the ability to understand the necessity of social responsibility and civil self-consciousness; The bachelor has the ability to evaluate his own performance critically.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: ・weekly assessment; Maximum score o 30 points; ・ Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points.

	• Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses)
	Contact person: Prof. Tamaz Kupatadze Tel. 577402626 Email: tamazk@hotmail.com; Prof. Viktor Nanobashvili Tel: 599151115 Email: v.nanobashvili@gtu.ge Prof. Janiko Khuntsaria Tel: 595450093 Email: j.khuntsaria@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Master's Educational Program	
Telecommunication	
	Program Credit Capacity(ECTS)
	120
	Qualification to be awarded
	Master of *Engineering in Telecommunication*
	The language of instruction
	Georgian
	The aim of the program The aim of the Master's Program is to prepare specialists for the professional requirements of the telecommunications industry, including broadband digital networks, Fiber-optical technologies, digital mobile radio communication and digital broadcasting systems, the principles of transmission of electromagnetic fields and waves, problems of satellite technology and electromagnetic ecology. The educational program envisages the possibility of studying international standards, professional development perspectives and performance characteristics, management and marketing of relevant professional activities. The educational program envisages the possibility of studying professional activities relevant to the international standards, perspectives and functioning peculiarities of technical development of enterprises and facilities, management and marketing.
	Learning outcomes of the educational program
	Knowledge and understanding: Has deep and systemic knowledge based on the research of telecommunication problems and relevant skills enabling development of new, original ideas. Knows: International standards, regulations, normative acts and other teaching materials relevant to the professional activities; Perspectives of technical development of enterprises and facilities and of their functioning peculiarities; Principles, technical data and constructive peculiarities of modern telecommunication systems and equipment; Research methods and determination of the conditions for conducting research work; Basic requirements for technical documentation development and practical patterns or devices; Mathematical apparatus related to scientific research work and determination of technical and economic efficiency of the obtained results; Achievements of science and technology in the field of telecommunication; The basics of the economy, production organization, labor and management; Labor legislation; Labor protection rules and norms. Is aware of the separate specific problems peculiar to the field and ways of their solution. **Applying knowledge into practice:** Has ability to: act in a new, unforeseen and multidisciplinary environment; Search for new, original ways to solve complex problems in the field of telecommunication, including independent research using the latest methods and approaches; Formulate and resolve tasks independently in the process of scientific research, requiring deep professional knowledge; Selection of the necessary methods of research based on the specific research tasks; Modify existing methods and process new methods of research; Process research and observation results, apprehend and analyse the results by taking into consideration the data given in the literature; Conduct bibliographic works using modern information technologies; Present the results of the conducted work through reports, summaries and an articleu by sing modern means of editing, printing and displaying; Organize the work of performers and executive management decisions under different opinions; Develop proposals and activities of methodical, statutory and technical documents for the implementation of processed projects and programs; Use advanced experiences to ensure efficient production and introduction of the latest methods of science and technology. Has the ability to determine the main issues (component), set the relevant time frames and draw up the graphs to accomplish the set goals. **Making judgments:** Has ability to: analyse the results obtained on the basis of the fundamental and applied research of telecommunication field; make conclusions on the results of observations and measurements with participation in experiments; Develop the methodology and program of the relevant system test in the modernization and operation of telecommunication equipment, forecasting and analysis of the

	results. Make technical justification of the decisions made for the development of telecommunication systems and networks; Implement simulated and mathematical models of functioning of telecommunication systems and networks; Analyse perspectives of the condition and development of telecommunication techniques. **Communication skill:** Is able to: communicate in Georgian and foreign languages with the academic and professional community of telecommunication industry, considering the achievements of the processes in the telecommunications systems and equipment and its conclusions, the arguments and research methods of academic honesty and information-communication technologies; Prepare a detailed written report on his/her ideas on solving the problems in the field of telecommunication; make public speeches. **Ability to learn:** Is able to: determine his/her learning directions to enhance professional knowledge and experience; understand the peculiarities of the learning process, plan its strategy at a higher level, evaluate the sequence of learning and conduct the process independently; conduct creative and innovative activities. He/she has analytical and logical thinking and ability to receive, process and analyze new information. Is prepared to pursue studies in Doctoral program in telecommunication and other related programs. **Values:** Is able to: evaluate his/her and other person's attitude towards values and contribute to the establishment of new values; Protect accepted norms of professional values, ethics and morals. Knows the ethical and legislative norms on the basis of which he/she has to act in the society and in the company. Is responsible for environmental protection and solving environmental problems. Has obligation of human rights protection and the ability to understand the necessity of social responsibility and civil self-consciousness.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: ・weekly assessment; Maximum score o 30 points; ・ Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. ・Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in the assessment rules of teaching and research components of Master'l Educational

	Program.
	Contact person: Prof. Janiko Khuntsaria Tel: 595450093 Email: j.khuntsaria@gtu.ge Prof. Viktor Nanobashvili Tel: 599151115 Email: v.nanobashvili@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Master's Educational Program
Telecommunication
Program Credit Capacity(ECTS)
120
Qualification to be awarded
Master of *Engineering in Telecommunication*
The language of instruction
Russian
The aim of the program The aim of the Master's Program is to prepare specialists for the professional requirements of the telecommunications industry, including broadband digital networks, Fiber-optical technologies, digital mobile radio communication and digital broadcasting systems, the principles of transmission of electromagnetic fields and waves, problems of satellite technology and electromagnetic ecology. The educational program envisages the possibility of studying international standards, professional development perspectives and performance characteristics, management and marketing of relevant professional activities. The educational program envisages the possibility of studying professional activities relevant to the international standards, perspectives and functioning peculiarities of technical development of enterprises and facilities, management and marketing.
Learning outcomes of the educational program
Knowledge and understanding: Has deep and systemic knowledge based on the research of telecommunication problems and relevant skills enabling development of new, original ideas. Knows: International standards, regulations, normative acts and other teaching materials relevant to the professional activities; Perspectives of technical development of enterprises and facilities and of their functioning peculiarities; Principles, technical data and constructive peculiarities of modern telecommunication systems and equipment; Research methods and determination of the conditions for conducting research work; Basic requirements for technical documentation development and practical patterns or devices; Mathematical apparatus related to scientific research work and determination of technical and economic efficiency of the obtained results; Achievements of science and technology in the field of telecommunication; The basics of the economy, production organization, labor and management; Labor legislation; Labor protection rules and norms. Is aware of the separate specific problems peculiar to the field and ways of their solution. **Applying knowledge into practice:** Has ability to: act in a new, unforeseen and multidisciplinary environment; Search for new, original ways to solve complex problems in the field of telecommunication, including independent research using the latest methods and approaches; Formulate and resolve tasks independently in the process of scientific research, requiring deep professional knowledge; Selection of the necessary methods of research based on the specific research tasks; Modify existing methods and process new methods of research; Process research and observation results, apprehend and analyse the results by taking into consideration the data given in the literature; Conduct bibliographic works using modern information technologies; Present the results of the conducted work through reports, summaries and an articleu by sing modern means of editing, printing and displaying; Organize the work of performers and executive management decisions under different opinions; Develop proposals and activities of methodical, statutory and technical documents for the implementation of processed projects and programs; Use advanced experiences to ensure efficient production and introduction of the latest methods of science and technology. Has the ability to determine the main issues (component), set the relevant time frames and draw up the graphs to accomplish the set goals. **Making judgments:** Has ability to: analyse the results obtained on the basis of the fundamental and applied research of telecommunication field; make conclusions on the results of observations and measurements with participation in experiments; Develop the methodology and program of the relevant system test in the modernization and operation of telecommunication equipment, forecasting and analysis of the

	results. Make technical justification of the decisions made for the development of telecommunication systems and networks; Implement simulated and mathematical models of functioning of telecommunication systems and networks; Analyse perspectives of the condition and development of telecommunication techniques. **Communication skill:** Is able to: communicate in Georgian and foreign languages with the academic and professional community of telecommunication industry, considering the achievements of the processes in the telecommunications systems and equipment and its conclusions, the arguments and research methods of academic honesty and information-communication technologies; Prepare a detailed written report on his/her ideas on solving the problems in the field of telecommunication; make public speeches. **Ability to learn:** Is able to: determine his/her learning directions to enhance professional knowledge and experience; understand the peculiarities of the learning process, plan its strategy at a higher level, evaluate the sequence of learning and conduct the process independently; conduct creative and innovative activities. He/she has analytical and logical thinking and ability to receive, process and analyze new information. Is prepared to pursue studies in Doctoral program in telecommunication and other related programs. **Values:** Is able to: evaluate his/her and other person's attitude towards values and contribute to the establishment of new values; Protect accepted norms of professional values, ethics and morals. Knows the ethical and legislative norms on the basis of which he/she has to act in the society and in the company. Is responsible for environmental protection and solving environmental problems. Has obligation of human rights protection and the ability to understand the necessity of social responsibility and civil self-consciousness.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: ・weekly assessment; Maximum score o 30 points; ・ Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. ・Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in the assessment rules of teaching and research components of Master'l Educational

	Program.
	Contact person: Prof. Viktor Nanobashvili Tel: 599151115 Email: v.nanobashvili@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Doctoral Educational Program	
Telecommunication	
	Program Credit Capacity(ECTS)
	180
	Qualification to be awarded
	Doctor of Engineering in Telecommunication
	The language of instruction
	Georgian
	The aim of the program The aim of the Doctoral Program is to prepare specialists with the Doctor's academic degree, having systemic vision and deep knowledge of problems based on fundamental research, in order to conduct scientific research, project-construction, industrial-technological, organizational-managerial and educational activities, who have knowledge and skills to use research methods in the main directions of telecommunication field, know the modern trends of the field development and can identify complex problems and develop new ideas and methods for solving them.
	Learning outcomes of the educational program
	Knowledge and understanding: Has knowledge based on the latest scientific and technological achievements in the field of telecommunication, enabling him/her to use expanding knowledge or innovative methods at the standard level required for a refereed publication; Knowledge of international and national standards, methodical, normative and other guiding material relevant to professional and research activities; Knows research methods and determines the conditions for conducting research work; Uses mathematical apparatus related to scientific research and can define technical and economic efficiency of the obtained results. **Ability to apply knowledge into practice:** Has the ability to: solve the problem independently based on the creative use of knowledge; Plan and implement innovative surveys independently and supervise them; Develop the latest research and analytical methods and approaches focused on gaining new knowledge and reflecting in international refereed publications; Construct imitational and mathematical models for the operation of telecommunication systems and networks; Analyse the prospects of development and condition of telecommunication techniques; Solve tasks of telecommunication systems and network construction reliability, service quality and economic growth and transparently formulate and identify priorities of the project objectives; Elaborate general options for problem solving, their analysis, prediction of results, and determination of compromise decision in multi-criteria conditions; **Making judgments:** Has the ability to: make critical analysis, synthesis and assessment of new, complex and contradictory ideas and approaches in telecommunication field, thereby facilitate the elaboration/development of a new methodology; Make the right and effective decision independently to solve the problem; Make technical and economic justification of the decision made for further development of telecommunication networks and systems. **Communication skills:** Has the ability to: demonstrate interconnection of new knowledge and accumulated knowledge in a clear and justified way, transmit difficult and controversial information to specialists and non-specialists considering their level of preparation; Use modern information and communication technologies creatively; Acquire new information technologies independently; Engage in the thematic polemics of the international scientific community in foreign language; participate in scientific-technical conferences and meetings. **Learning skills:** Has the ability to: develop new ideas or processes while conduction learning and other activities (including research activity), based on the knowledge of the latest achievements. Has the ability to: plan and control the learning process of others; Organize research and technical knowledge enhancement activities; Contribute to the academic and professional fields of knowledge on the basis of wide implementation of scientific-research results; Use full range of teaching resources.

	Values: Has the ability to: research the ways of establishing values and elaborate innovative methods for their establishment; evaluate his/her own and others attitudes towards values; Observe norms of professional values, ethics and moral, which is necessary condition to establish close contacts, have relation and achieve consent and unanimity with company executives, technical personnel, investment and commercial banks, business circles, municipal bodies, state structures and public representatives, international and local organizations, partners, etc.; Promote the creation of a global information society; Forecast trends in telecommunication technologies and technology development and reflect them in educational programs and development plans of teaching-scientific base.
	Assessment system
	Assessment system is based on a 100-point system. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment of doctoral thesis is based on 100 point system: h) Excellent (summa cum laude) - excellent work i) Very good (magna cum laude) - the result is above all requirements; j) Good (cum laude) - the result exceeds the requirements; k) Average (bene) - the result meets all the requirements; l) Satisfactory (rite) - the result meets the requirements despite the shortcomings, m) Inadequate (insufficienter) - the result does not meet the set-out requirements due to significant shortcomings; n) Completely unsatisfactory (sub omni canone) - the result does not meet requirements. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in assessment rules of teaching and research components of Doctoral Educational Program.
	Contact person: Prof. Tamaz Kupatadze Tel. 577402626 Email: tamazk@hotmail.com; Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Bachelor's Educational Program
Management of Engineering
Program Credit Capacity(ECTS)
240
Qualification to be awarded
Bachelor of Management
The language of instruction
Georgian
The aim of the program The aim of the program is to prepare specialists for the purpose of solving industrial and service enterprise management tasks with the high quality and cost of production and services in the efficient use of equipment and installations, as well as for the development of the technological re-equipment of the enterprises, the creation of new products and services and for effective participation in realization.
Learning outcomes of the educational program
Knowledge and understanding • Has knowledge of production and operational management, quality assurance of products and processes, project management, technology management, awareness of relevant issues on enterprise management activities and managerial decisions; • Masters the theoretical basics of manufacturing operations management with the competence of middle managers, methodology for drafting and realizing technological projects, has ability to use appropriate approaches in general and in terms of telecommunication or power engineering spheres. **Ability to apply the knowledge into practice** • Has ability to participate in planning the manufacturing operations and technological projects, to elaborate activities independently for ensuring the acceptable quality for their realization results. • Has ability to organize manufacturing processes and projects for implementation of projects, organize safe and effective work of personnel, effective communication with business partners, assessing operational risks in order to depict them in strategic decisions, planning the operating system of business on the corporate level based on specific guidelines; has ability to consider all the above-mentioned tasks that are characteristic of telecommunication or power engineering. **Making judgment** • Has ability to use approaches adopted as a result of passing special disciplines to evaluate the situation in the enterprise in relation with the existing technological level and development perspectives; • Has ability to draw relevant conclusions based on data collection and quantitative analyzes that reflect the control over the conduct of industrial operations, as well as the realization of projects related to technological rearmament; He/she is able to prepare the initial conclusions on the basis of systematization of appropriate information to evaluate the business potential of telecommunication or power engineering companies **Communication skills** • Has the ability to present own ideas and opinions laconically, clearly and in compliance with grammar rules in the oral and written forms. • Has the ability to reflect the results of the enterprise activities and decisions in appropriate reports dequately; Can deliver simple information to specialists in foreign language and perform auxiliary functions while conducting business negotiations. **Ability to learn** • Has the ability to objectively evaluate his/her qualification level, to plan his/her own further

study thoroughly and to use the existing learning opportunities, including distance learning;

- Has the ability to acquire new elements of knowledge necessary to improve the qualifications independently and the methods of professional activitie still unfamiliar for him/her.

Values

His/her activities are guided by the established norms of ethics and moral, in professional activity, he/she shows personal qualities such as accuracy, punctuality, objectivity, transparency and organization of actions; Has apprehension of professional responsibility for rhythmic and efficient work of enterprises, decisions made independently in non-typical situations; Understands manager's responsibilities on the goods and services delivered to the final consumer; Takes responsiblility for environmental and public liabilities of enterprises; Participates in the value formation process and strives to establish them within hisher own competence.

Assessment system

Assessment system is based on a 100-point scale.

Positive grades:
(A) - Excellent - the rating of 91-100 points;
(B) – Very good - - the rating of 81-90 points
(C) - Good - the rating of 71-80 points
(D) - Satisfactory - the rating of 61-70 points
(E) - Enough - the rating of 51-60 points

Negative grades:
(FX) - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work;
(F) – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning.

Assessment forms:

- weekly assessment; Maximum score o 30 points;
- Mid-term exam;
  - I midterm exam. The maximum score - 20 points.
  - II midterm exam. The maximum score - 20 points.
- Final exam - maximum score 30 points.

Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses)

Contact person:
Prof. Archil Samadashvili
Tel. 599305552
Email: a.samadashvili@gtu.ge
Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Bachelor's Educational Program
Management of Engineering
Program Credit Capacity(ECTS)
240
Qualification to be awarded
Bachelor of Management
The language of instruction
Russian
The aim of the program The aim of the program is to prepare specialists for the purpose of solving industrial and service enterprise management tasks with the high quality and cost of production and services in the efficient use of equipment and installations, as well as for the development of the technological re-equipment of the enterprises, the creation of new products and services and for effective participation in realization.
Learning outcomes of the educational program
Knowledge and understanding • Has knowledge of production and operational management, quality assurance of products and processes, project management, technology management, awareness of relevant issues on enterprise management activities and managerial decisions; • Masters the theoretical basics of manufacturing operations management with the competence of middle managers, methodology for drafting and realizing technological projects, has ability to use appropriate approaches in general and in terms of telecommunication or power engineering spheres. **Ability to apply the knowledge into practice** • Has ability to participate in planning the manufacturing operations and technological projects, to elaborate activities independently for ensuring the acceptable quality for their realization results. • Has ability to organize manufacturing processes and projects for implementation of projects, organize safe and effective work of personnel, effective communication with business partners, assessing operational risks in order to depict them in strategic decisions, planning the operating system of business on the corporate level based on specific guidelines; has ability to consider all the above-mentioned tasks that are characteristic of telecommunication or power engineering. **Making judgment** • Has ability to use approaches adopted as a result of passing special disciplines to evaluate the situation in the enterprise in relation with the existing technological level and development perspectives; • Has ability to draw relevant conclusions based on data collection and quantitative analyzes that reflect the control over the conduct of industrial operations, as well as the realization of projects related to technological rearmament; He/she is able to prepare the initial conclusions on the basis of systematization of appropriate information to evaluate the business potential of telecommunication or power engineering companies **Communication skills** • Has the ability to present own ideas and opinions laconically, clearly and in compliance with grammar rules in the oral and written forms. • Has the ability to reflect the results of the enterprise activities and decisions in appropriate reports dequately; Can deliver simple information to specialists in foreign language and perform auxiliary functions while conducting business negotiations. **Ability to learn** • Has the ability to objectively evaluate his/her qualification level, to plan his/her own further

study thoroughly and to use the existing learning opportunities, including distance learning;

- Has the ability to acquire new elements of knowledge necessary to improve the qualifications independently and the methods of professional activitie still unfamiliar for him/her.

Values

His/her activities are guided by the established norms of ethics and moral, in professional activity, he/she shows personal qualities such as accuracy, punctuality, objectivity, transparency and organization of actions; Has apprehension of professional responsibility for rhythmic and efficient work of enterprises, decisions made independently in non-typical situations; Understands manager's responsibilities on the goods and services delivered to the final consumer; Takes responsiblility for environmental and public liabilities of enterprises; Participates in the value formation process and strives to establish them within hisher own competence.

Assessment system

Assessment system is based on a 100-point scale.

Positive grades:
(A) - Excellent - the rating of 91-100 points;
(B) – Very good - - the rating of 81-90 points
(C) - Good - the rating of 71-80 points
(D) - Satisfactory - the rating of 61-70 points
(E) - Enough - the rating of 51-60 points

Negative grades:
(FX) - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work;
(F) – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning.

Assessment forms:

- weekly assessment; Maximum score o 30 points;
- Mid-term exam;
  - I midterm exam. The maximum score - 20 points.
  - II midterm exam. The maximum score - 20 points.
- Final exam - maximum score 30 points.

Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses)

Contact person:
Prof. Archil Samadashvili
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Email: a.samadashvili@gtu.ge
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Bachelor's Educational Program	
Production and Service Systems Engineering	
	Program Credit Capacity(ECTS)
	240
	Qualification to be awarded
	Bachelor of Liberal Arts
	The language of instruction
	Georgian
	The aim of the program The program aims to prepare a bachelor equipped with engineering and managerial general education, who will have knowledge of the designing, implementing and operating the industrial and service systems for industrial resources, equipment, information and energy, on the basis of analytical, computational and experimental methods of integrating systems.
	Learning outcomes of the educational program
	Knowledge and understanding - Has a solid basic knowledge on the role of technological and organizational systems in the achievement and maintenance of production and service business, apprehends the necessity of interconnectedness of engineering and management decisions; Knows to apply a process approach in designing operating systems of enterprises, their effective implementation and general methodology for ensuring work efficiency. **Ability to apply the knowledge into practice -** Has the ability to integrate engineering processes with business planning in a joint project and effective participation in its realization; Capable of planning industrial systems for the fields of energy and/or communication, also for any other production or service area; Has ability to adequately evaluate the results obrained by operation of production systems, develop and implement organizational activities to ensure the high quality of products and processes and proper expenditure of resources. **Making judgment -** Makes conclusions on the expected results based on modeling of industrial systems and simulation analysis of action; Through the control of the performance of industrial and service operations, he/she observes the realization of enterprise work plans and makes conclusions about the necessity of corrective activities. **Communication skills -** Has the ability to present own ideas and opinions laconically, clearly and in compliance with grammar rules in written form and to transfer own opinions and solutions to employees and business partners. **Ability to learn -** Has ability to assess the level of own qualification objectively and to reveal the necessity of its perfection; He is aware of the professional development opportunities and is ready to use them independently. **Values -** Knows and shares the ethics and rules of professional conduct established in engineering and entrepreneurial practice; Conducts professional activity in accordance with the principles of precision, punctuality, objectivity, transparency and organization; Has adequate approach towards the ecological and social impacts of professional solutions and is aware of his responsibility.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades:

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Master's Educational Program
Management of Technical Projects and Industrial Policy
Program Credit Capacity(ECTS)
120
Qualification to be awarded
Master of Management in Project Management
The language of instruction
Georgian
The aim of the program The aim of the program is to prepare highly qualified specialists for development and realization of innovative solutions, with respect to manufacturing systems and industrial policies.
Learning outcomes of the educational program
Knowledge and understanding - has solid and systemic knowledge required for innovative engineering of industrial systems and radical improvement of their efficiency; The graduate is fully aware of the role of complex socio-technical systems in society development and the importance of relevant industrial policy. **Ability of applying knowledge into practice -** ensures optimization of professional standards established in the area of his/her activities; Through conducting relevant research, he/she has ablility to study independently new approaches to organization of industrial and service operations and production potential of new technologies; Has ability to develop adequate strategic decisions regarding technologies and manufacturing operations, based on the use of quantitative analysis and imitation modeling of the received information, and provide their realization to innovative production systems. **Making Judgment -** on the basis of analyzing the scientific information obtained by others as well as analysis of the results of his/her own research, is able to synthesize proposals for long-term entrepreneurial policy for specific enterprises and individual sectors as well as for the industry as a whole. Formulates his/her conclusions in quantitative formulas, in addition gives exhaustive argumentation of the innovations of his/her own choice. **Communication skills -** In compliance with the standards of academic honesty and adequate use of information-communication technologies, adequate representation of his/her conclusions, arguments, research methods and results, for both professional and any other society. **Learning skills -** Ability to evaluate the level of his/her qualifications objectively and to comprehend the need for perfection; Ability to elaborate strategy of professional development and to use its realization capabilities (independent work, internship in other organizations, studies in doctoral studies, post-doctoral research) creatively. **Values -** Share the professional values established in the field of his/her activities, actively promoting establishment and further development of subordinates, co-performers, business partners his/her own environment; Fully takes responsibility for professional activities before both employers and subordinate employees as well as the entire society.
Assessment system
Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the

	subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: • weekly assessment; Maximum score o 30 points; • Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. • Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in the assessment rules of teaching and research components of Master'l Educational Program.
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Master's Educational Program
Management and Policy of Technology
Program Credit Capacity(ECTS)
120
Qualification to be awarded
Master of Business Administration in Technological Management
The language of instruction
English
The aim of the program The Master's Program "Management and Policy of Technology" aims to give the graduate knowledge and skills to analyze difficult socio-technical problems, create a structural model of their solution, to elaborate a complex project and plan for implementation of its results, to develop programs and policies of technological direction. The academic program includes management of technological specialization discipline, covering engineering issues set out in master courses "Quantitative Analysis", "Business Planning", "Business Economics", "Information Technologies", etc. The program is focused on the development of various fields of management, existing the problems and challenges. The program offers a systematic analysis of the concepts and principles that are based on technological management discipline and irs apprehension. The program encompasses the theoretical issues and opinions related to the production practices, as well as the organization's production and operational policies.
Learning outcomes of the educational program
Knowledge and understanding – The graduates of the program will have full understanding of technology as a corporate resource and will have ability to research and analyze its meaning and purpose. Graduate will know how to use the technology to design and create products and services, on the one hand, to fully satisfy the customer's demand and, on the other hand, to ensure corporate competitiveness, performance and maximization. Through the acquired skills of analysis, modeling and problem solving, the graduate will effectively use technical knowledge in its particular engineering field. Knowledge of basic issues, system analysis and modeling will enable the graduate to solve complex and versatile problems of management. **Ability of applying knowledge into practice -** Graduates will have the knowledge of methods, means and techniques to plan creatively and evaluate the impact of technical solutions on organizations, conduct information research and analysis through appropriate human and technological resources. The graduate will combine technical systems and organizational schemes to achieve correct technical solutions. He/she will be able to use his/her knowledge successfully in determining the strategy of industrial and operatons management, in managerial decision making process, in proper planning of technological resources. **Making Judgment -** The graduates will have ability to make conclusions about the use of diverse technological capabilities, the impact on the target goals, objectives and strategies of the organization. On the basis of analysis of potential and neighboring technologies, the graduate will have ability to evaluate the commercial results, introduced by the technology implemented in the firm. Considering the social trends of creating new products, the graduate will be able to make a decision on the choice of market for selling the products. **Communication skills -** Graduate connects with each other, on the one hand, performing systems and networks and on the other hand, facing problems and challenges and the ethical sides of their solution, that enables him/her to describe and participate in discussions on the effective management of innovative technologies and manufacturing operations; To demonstrate the ability to supervise the team in achieving the goal; Work effectively, as a team member, for the implementation of group projects and analysis of problems; Elaborate and implement the results of projects, develop and submit relevant reports.

	Learning skills - The graduate will have ability to: evaluate the level of qualification objectively and apprehend the necessity of perfection; elaborate and realyze strategy of professional development; Use his/her own abilities (independent work, internship in other organizations, study in doctoral programs, etc.) creatively. **Values -** Graduate shares the professional values established in the field of activity, actively promotes their establishment and further development in the own environment (subordinates, co-performers, business partners, etc.); Fully takes responsibility for professional decisions before the employers and subordinate employees, as well as the entire society.
	Assessment system
	Assessment system is based on a 100-point scale. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment forms: • weekly assessment; Maximum score o 30 points; • Mid-term exam; I midterm exam. The maximum score - 20 points. II midterm exam. The maximum score - 20 points. • Final exam - maximum score 30 points. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in the assessment rules of teaching and research components of Master's Educational Program.
	Contact person: Prof. Alexander Abesadze Tel. 599223257 Email: a.abesadze@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi

Doctoral Educational Program	
Innovation and Operations Management	
	Program Credit Capacity(ECTS)
	180
	Qualification to be awarded
	Doctor of Management
	The language of instruction
	Georgian
	The aim of the program The ongoing transformation of the country's economy, the expansion of international cooperation, puts principally new demands on entrepreneurial entities. The issue of commercialization of products (services), first of all, entrepreneurial activity based on innovations and the latest technologies, takes important place in the business of the enterprise. As a result, the demand is increased for specialists, who have the ability to analyze the essence of the engineering business (scientific products and technologies), analyze the local and international markets with a systemic view, solve manufacturing and organization management issues. The intensification of the economy and the need to increase its efficiency requires the continuous improvement of various economic processes, first of all of the forms and methods of management innovative processes, , as the high level of innovation is the guarantee of economic development and national security of the country. At present, the non-existence of innovations management mechanism is one of the weakest parts of the organizational-economic system of national economy management. In the market economy, innovations should contribute to the intensive development of the economy, ensure implementation of the advancement of science and technology in the production, satisfy customers' need for high quality products and services. The acquisition of innovations and operations management is a necessary condition for the development of modern managers and professionals. The main aim of the program is to equip student with systematic theoretical and practical knowledge in order to: manage innovative processes in the Georgian economy, extend experience, to create a normative-legal base, to establish mechanism for creation and management system of innovative organizations.
	Learning outcomes of the educational program
	Knowledge and understanding - Knowledge based on modern paradigms and innovative achievements of engineering - innovative spheres that make opportunities to apply innovative methods in practical activities, Prepare refereed publications relevant to the existing standards. - Apprehend the importance of receiving the necessary knowledge. Rethink the accumulated knowledge and empirical experiences and if needed, reassess and update it. **Ability to apply knowledge into practice** - Correct and creative understanding of modern technological achievements and innovations. Readiness to introduce them in practice; Prepare scientific-practical work on the latest forms and methods of innovations and operations management. - Develop and implement methods and forms of research innovation system for the need for scientific-practical activities, accumulate and disseminate new knowledge primarily through international scientific refereed publications. **Making judgments:** - Critical analysis, synthesis and assessment of new, complex and contradictory ideas and approaches as a result of the necessary assessments and information processing for the elaboration and development of proper methodology in innovation and operations management. - Draw grounded conclusions and make decisions independently on innovative processes. **Communication skill**

	- Ability to present new information reasonably relative to the knowledge in the field of innovative technologies. - Ability to get involved in the thematic polemic with the international scientific community and exchange scientific achievements. - Ability to deliver information to the audience on his/her conclusions, arguments and research methods clearly and to convince listeners. Use modern technologies when dealing with people. **Learning skills:** - Ability to acquire new ideas, initiatives and undertakings based on the latest achievements of knowledge; Study independently, generate new ideas or processes in the process of study, activity and research, based on the knowledge of the latest achievements. Promotion of learning organization. **Values** Has the ability to continuously pursue to the establishment of general and national values. Explores and develops innovative methods for introducing the values. In his scientific-theoretical, practical and pedagogic activities, he/she applies such values as professional objectivity, collegiality and honesty.
	Assessment system
	Assessment system is based on a 100-point system. Positive grades: **(A)** - Excellent - the rating of 91-100 points; **(B)** – Very good - - the rating of 81-90 points **(C)** - Good - the rating of 71-80 points **(D)** - Satisfactory - the rating of 61-70 points **(E)** - Enough - the rating of 51-60 points Negative grades: **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass the subject and is given the right to take the additional exam once with independent work; **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning. Assessment of doctoral thesis is based on 100 point system: o) Excellent (summa cum laude) - excellent work p) Very good (magna cum laude) - the result is above all requirements; q) Good (cum laude) - the result exceeds the requirements; r) Average (bene) - the result meets all the requirements; s) Satisfactory (rite) - the result meets the requirements despite the shortcomings, t) Inadequate (insufficienter) - the result does not meet the set-out requirements due to significant shortcomings; u) Completely unsatisfactory (sub omni canone) - the result does not meet requirements. Evaluation forms, methods, criteria and scales can be found in the relevant educational courses (syllabuses) and in assessment rules of teaching and research components of Doctoral Educational Program.
	Contact person: Prof. Konstantine Khmaladze Tel. 577112125 Email: k.khmaladze@gtu.ge Address: GTU, Faculty of Power Engineering and Telecommunication, 8th building, M. Kostava St. 77, 0175, Tbilisi