

**MINISTRY OF HIGHER EDUCATION, SCIENCE AND  
INNOVATIONS OF THE REPUBLIC OF UZBEKISTAN**

**TASHKENT STATE TECHNICAL UNIVERSITY  
NAMED AFTER ISLAM KARIMOV**

«CONFIRMED BY»



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« 28 » 08 2023 y.

**PATENT, LICENSING AND CERTIFICATION**

**MODULE HANDBOOK**

Field of knowledge:	700 000 – Engineering, processing and construction industries
Field of study:	710 000 – Engineering work
Specialty:	70711302 – Metrology, standardization and quality management (by industry)

## MODULE REFERENCES

Module name	Patent studies, licensing and certification
Code, if applicable	PLS 1104
Semesters in which the module is taught	1
Lecturer	Turgunboyev Asadulla - Candidate of Technical Sciences, Acting Professor, of the department "Metrology, technical regulation, standardization and certification"
Language	Uzbek, Russian
Relation to curriculum	Mandatory
Type of teaching, contact hours	Lecture, practice
Workload	Total study load: 120 hours, Contact hours: – 60 hours; lecture – 30 hours; practice - 30 hours. Independent education: – 60 hours.
Credit points	4
Recommended prerequisites	Introduction to the specialty, certification of products and services, basic technical regulation.
<b>Module objectives/ intended learning outcome</b>	<p><i>Students are taught the role of the patent system in scientific and technical development, the patent-legal aspCredit points of international scientific-technical cooperation and the basics of patent-licensing laws in force in Uzbekistan and other countries, working with patent documents, conducting information searches and methods, to know the methods, to have experience of working with normative and scientific-technical documents and literature related to licensing, certification, and to form sufficient knowledge on their use, to have the ability to make competent decisions will be</i></p> <p><b><i>In practice sessions</i></b> application of the theoretical knowledge acquired by students to the practical process, problem-based approach to the issues of determining their objCredit points and methods and formation of research, familiarization and work with various normative and official documents in the field of patent science, licensing and certification, intellectual property in certain activities and processes they will have knowledge and skills suitable for the development and application of regulatory documents in the field of legal protection of products, certification.</p> <p><i>Students apply the knowledge gained in the lectures and strengthen the theoretical knowledge in a practical way.</i></p> <p><b><i>Students doing independent work</i></b>they study scientific topics, get an idea about the legislation of Uzbekistan in the field of protection of intellectual property objCredit points, types of protection documents; application for granting a patent for an invention, invention documents; working with databases, patent research, basic Concepts of Intellectual Property Licensing the skills of working with modern literature on the field expand the horizons of future specialists and Certification objCredit points and subjCredit points. It helps to analyze the possibilities of applying the national certification system of the Republic of Uzbekistan.</p>

<p><b>Content</b></p>	<ol style="list-style-type: none"> <li>1. Introduction to the subject "Patent science, licensing and certification". The concept of "intellectual property".</li> <li>2. Classification of intellectual property objCredit points. Basic concepts and terms.</li> <li>3. The expertise of Uzbekistan in the field of protection of IM objCredit points. Types of protection documents.</li> <li>4. International cooperation in the field of protection of intellectual property objCredit points.</li> <li>5. Insights into Discovery Software and Database for EHM.</li> <li>6. Invention, types. Application documents for granting a patent for an invention.</li> <li>7. Useful model. Basic concepts. Application documents.</li> <li>8. Industrial samples. Trademarks. Application documents for these objCredit points.</li> <li>9. International patent classification. Patent information. Databases.</li> <li>10. Patent research. Basic concepts.</li> <li>11. World patent systems.</li> <li>12. Intellectual Property Licensing. Basic concepts based on concrete examples.</li> <li>13. TJTS agency of the Republic of Uzbekistan and its structure. Purpose, tasks and activities of the certification system.</li> <li>14. National certification system of the Republic of Uzbekistan. Certification objCredit points and subjCredit points.</li> <li>15. Activity of expert auditors and their training.</li> </ol>
<p><b>Study and examination requirements and forms of examination</b></p>	<p>In writing, it includes the full mastery of theoretical, practical and methodological concepts of science, the ability to correctly reflect the results of analysis, mastery of independent educational topics.</p>
<p><b>Media employed</b></p>	<p>Completion of science assignments and successful submission of current, intermediate, and final control forms.</p>

<b>Reading list</b>	<ol style="list-style-type: none"> <li>1. Law of the Republic of Uzbekistan "On Technical Regulation". Changes and additions, new edition. 27.02.2023</li> <li>2. Law of the Republic of Uzbekistan on licensing, permitting and notification procedures. 07/14/2021 No. LRU-701</li> <li>3. Decree No. PF-89 of the President of the Republic of Uzbekistan of March 17, 2022 "On measures to ensure the rights and freedoms of citizens, as well as to further increase the efficiency of the activities of justice bodies and institutions" (Uzbekistan "Intellectual Property Center" State Institution under the Ministry of Justice of the Republic).</li> <li>4. Decree of the President of the Republic of Uzbekistan No. PQ-4965 dated January 28, 2021 "On measures to improve the system of protection of intellectual property objCredit points" (paragraph 7 on the establishment of patent studies in universities).</li> <li>5. "Protection of industrial property". Ministry of Justice of the Republic of Uzbekistan portal of intellectual property electronic state services. 2023. New electronic procedure for submission of documents and correspondence to intellectual property objCredit points.</li> <li>6. Esosnin, Fakaner, Patent studies: a Reading list and practice for masters and undergraduate specialists, Moscow, Yurayt, 2019, 384 p.</li> <li>7. Turgunbayev A., Torayev Sh.A. Study guide for students of higher educational institutions "Patent science, licensing and certification". Tashkent, TashDTU, 2015. 280 p.</li> <li>8. The official publication of the IMA of the Republic of Uzbekistan "Official Bulletin", 12 issues per year. Tashkent. 1992-2023.</li> <li>9. ISO 9001:2015Quality management systems — Requirements.</li> <li>10. Komissarov, A.P. Patent science: Reading list / - Moscow: IP Ar Media, 2024. - 113 p.</li> <li>11. Alekseev, G.V. Theory of solving inventive problems: Reading list / - Saratov: IP Er Media, 2019. - 152 p.</li> <li>12. Sergeev, A. G. Certification: Reading list and workshop for secondary vocational education / Teregeriya. - 4th ed., - Moscow: Yurayt Publishing House, 2024. - 204 p.</li> </ol>
<b>Reviewers:</b>	<p>Yu.G. Shipulin - professor of "Information processing and management" department of Tashkent State Technical University, doctor of technical sciences;</p> <p>A.T. Rakhmanov - professor of the department "Metrology, technical regulation, standardization and certification", doctor of technical sciences.</p>
<b>Confirmed place and time</b>	Developed and approved by Tashkent State Technical University (Report № 1 28.08.2023)

## Staff Handbook

<b>Full name</b>	<i>Turgunbaev Asadulla</i>		
<b>Teaching area</b>	Metrology, technical regulation, standardization and certification		
	2002-2021	Tashkent State Technical University named after Islam Karimov	Associate Professor at the Department of Metrology and Measuring Technology
	1991-2002	Tashkent Polytechnic Institute	(Candidate of Technical Sciences. 05.11.13 - "Instruments and methods for monitoring the natural environment, materials, substances and products" methods and technical tools for control of parameters of moisture and heat treatment of grain products.
	1968-1973	Tashkent Polytechnic Institute	Physicist engineer
<b>Labor activity</b>	1973 - 1982	Institute of Electronics of the Academy of Sciences, Tashkent	Research intern, postgraduate student, researcher
	1991-1994	Tashkent State Technical University	assistant of the department of Metrology and measuring technology
	1994-1997	Tashkent State Technical University	doctoral student department of Metrology and measuring technology
	2005-2006	Tashkent State Technical University	Head of the department "Metrology, standardization and certification"
	2010-2011	Tashkent State Technical University	Head of the department "Metrology, standardization and certification"
	2011-2013	Tashkent State Technical University	Head of Intellectual Property Department
	2006-2021	Tashkent State Technical University named after Islam Karimov	Associate Professor of the department Metrology, technical regulation, standardization and certification
	2021- currently	Tashkent State Technical University named after Islam Karimov	acting professor of the department Metrology, technical regulation, standardization and certification
	<b>Research and development over the past 5 years</b>	Energy saving and renewable energy sources Creation of new strong nanostructured metals based on <i>Al</i> and <i>Ta</i> oxides. Creation of methods for obtaining a source of laser pulses of femtosecond duration in nonlinear photon crystals	
<b>Intra-industry cooperation over the past 5 years</b>	BNTU 2+2 bachelor degree joint program to teach bachelor students in two universities MFI 1+1 master degree joint program to teach master students in two universities (Moscow State Technical University named after N. E. Bauman)		

<b>Patents and intellectual property</b>	Patent for invention	IAP 06479. 04/30/2021	A device for monitoring the moisture content of liquid material.
	Computer program	№DGU 10464 03/18/2021	A program for calculating the treatment of bulk objects with ozone-containing gas.
	Computer program	№DGU 10723 04/08/2021	An operating system for processing the results of moisture measurements of powdery and bulk building materials and ensuring the operation of the moisture meter.
	Computer program	№DGU 14299 01/21/2022	Program for selecting electromagnetic transducers using morphological matrices.
	Patent for invention	IAP 06796. 02/28/2022	Capacitive moisture meter for oil, petroleum products and bulk materials.
	Computer program	№DGU 14673 02/21/2022	Program for estimation of ozone concentration in water.
	Patent for invention	IAP 06856 15.05.2022	Capacitive moisture meter for bulk and liquid materials.
	Utility model patent	FAP 01853	Date drying method.
	Computer program	№DGU 21638 18.01.23	Controlling temperature and humidity in greenhouses using mathematical modeling.
<b>Important publications in the last 5 years</b>	<ol style="list-style-type: none"> <li>1. A.Turgunbaev, H.A.Usmanova. Mathematical Model of Interaction Ultra High Frequency Wave with Wet Grain. International Journal of Innovative Research in Science, Engineering and Technology. Volume 10, Issue 3, 2021. pp. 1892-1897.</li> <li>2. A.Turgunbaev, H.A. Usmanova, A. Fakhry kamel Mohamad. Model of the interaction of a microwave with the wet material. Technical science and innovation. Tashkent. 2021. №4. PP 121-126.</li> <li>3. A.Turgunbaev, H.A. Usmanova, O.Sh.Khakimov. Analysis of the Current State of Providing Metrological Traceability and Assessment of Uncertainty of Measurement. International Journal of Innovative Research in Science, Engineering and Technology. Volume 10, Issue 11, 2021. pp. 1892-1897.</li> <li>4. A.Turgunbaev, B.P. Boysunov, H.A.Usmanova, N.E. Sheina. Analysis of the stresdeformation condition of the disassembly parabolic antenna. Technical science and innovation. Tashkent. 2021. №1. PP 184-192.</li> <li>5. A.Turgunbaev, H.A.Usmanova, N.E. Sheina. Principles of constructing electromagnetic elements and analysis of the static characteristics of an electromagnetic converter. "Innovations in the Oil and Gas Industry" Branch of the Russian State University of Oil and Gas (NRU) named after THEM. Gubkin in Tashkent. No. 4, 2022. pp. 62-69.</li> <li>6. A.Turgunbaev, H.A.Usmanova, SH.B.Madaliev, H.Karimov. Metrological supply for cotton materials. International Journal of Innovative Research in Science, Engineering and Technology. Volume 11, Issue 10, October 2022. pp. 13058-13062. p-ISSN: 2347-6710. DOI:10.15680/IJRSET.2022.</li> <li>7. A.Turgunbaev, H.A.Usmanova, N.E. Sheina. Thermal elements of measuring devices. Innovations in the oil and gas industry. Branch of the Russian State University of Oil and Gas (NRU) named after I.M. Gubkin in Tashkent. Volume 3, No. 3.2022. pp. 43-49. doi.org/10.5281/zenodo.7466173.</li> <li>8. A.Turgunbaev, H.A.Usmanova, U.U.Khudaikulov. Problems in solution of metrological provision of control of physical quantities. Technical science and innovation. Tashkent. 2022. №4. PP 146-154.</li> </ol>		

9. A.Turgunbaev, H.A.Usmanova, O.Kh.Abdurakhmanov. Main principles of integrated quality management when selecting employees. *International Journal of Innovative Research in Science, Engineering and Technology*. Volume 11, Issue 12, December 2022. pp. 14285-14287. p-ISSN: 2347-6710 DOI:10.15680/IJRSET.2022.
10. A.Turgunbaev, H.A.Usmanova, N.E. Sheina. Organization program and components of the metrological support process. *Science and innovation international scientific journal*. Volume 2, Issue 12, December 2023. pp.92-97.[doi.org/10.5281/zenodo.10365459](https://doi.org/10.5281/zenodo.10365459).
11. A.Turgunbaev, H.A.Usmanova, N.E. Sheina. Optoelectronic elements of measuring devices. *Innovations in the oil and gas industry*. Branch of the Russian State University of Oil and Gas (NRU) named after I.M. Gubkina. VOLUME 4, No. 2. 2023. pp. 37-42. [doi.org/10.5281/zenodo.8311919](https://doi.org/10.5281/zenodo.8311919).
12. A.Turgunbaev, B.A. Nazarbayeva, T. Tajibaev. Analysis of metrological characteristics of modern sensors. *SCHOLAR*. Volume 1, ISSUE 2, 2023. January, 2023. pp.176-182.
13. A.Turgunbaev, B. M. Temerbekova, H. A. Usmanova, U. B. Mamanazarov. Application of ultra-high-frequency method for measuring the moisture content of bulk materials in complex metallurgical processes. **«Черные металлы»“Ferrous Metals”**, No. 4, 04.2023. pp. 23-29. DOI: 10.17580/chm.2023.04.04. (Q2).
14. A. Turgunbaev, Kh.A.Usmanova, Z.Kh. Ernazarova. Methodology for Quality Assessment. Application Of Qualimetric Analysis. *International Journal of Advanced Research in Science, Engineering and Technology*. Vol. 11, Issue 5, May 2024. pp. 21775-21779. ISSN: 2350-0328.
15. A.Turgunbaev, H.A. Usmanova. Development of a universal humidity converter at ultra high frequency. *Technical science and innovation*. Tashkent. 2024. №2. PP 187-194.
16. A.Turgunbaev, P.M. Matyakubova, H.A.Usmanova, N.E. Sheina. Verification and calibration of measuring instruments. /Tutorial/. – T.: “Fan va technologiyalar nashriyot-matbaa uyi,” 2020. - 178 p.
17. A.Turgunbaev, P.M. Matyakubova, H.A.Usmanova, N.E. Sheina. Basics of standardization. A textbook for students of technical universities. – T.: “Fan va technologiyalar nashriyot-matbaa uyi, 2022.
18. A. Turgunbaev, Kh.A.Usmanova, Z.Kh. Ernazarova. Intellectual property protection printed Methodological manual. TSTU.2022.105 p.
19. A.Turgunbaev, H.A.Usmanova, N.E. Sheina. Theoretical foundations of qualimetry and quality management. Textbook for students of technical universities. – T.: “Fan va technologiyalar nashriyot-matbaa uyi, 2023.” ISBN 978-9943-9262-7-1.
20. A.Turgunbaev, B. M. Temerbekova, H. A. Usmanova. Metrology, standardization and certification. Textbook for students of technical universities. – T.: “Sahhof, 2024. 176 p.” ISBN 978-9910-9594-9-3.
21. A.Turgunbaev, P.R. Ismatullaev, P.M. Matyakubova, Sh.A.Turaev. Patenting, licensing and certification. Textbook. According to the decision of the Council of Tashkent State Technical University No. 5 of 2024.15.01 and order No. 01/9-05-19, 70711302- a publication permit was obtained for the textbook for the speciality of metrology, standardization and quality management.

<b>Activities in specialized bodies over the past 5 years</b>	1. Working group of the practical work program for 2021-2023 on the development of intellectual property (invention, utility model, industrial model, selection achievements).	member	2021-2023
	2. "Journal of Standardization and Technical Regulation in the World and Prospects for Development" published at TSTU named after Islam Karimov	member	2019-2024
	3. Expert Group, which authorizes the publication of materials on TSTU named after Islam Karimov	member	2001-2024
	4. Editorial board of Technical science and innovation journal published at TSTU named after Islam Karimov	member	2015-2024
	5. Selection of women scientists and researchers	member	2020-2023
	6. Member of the editorial board of "Technical stars" journal published at TSTU named after Islam Karimov	member	2015-2024