

DESCRIPTION OF COURSE UNIT

1.

Course unit title	Code
Law and Technologies	100259

2.

Name of lecturer(s) (provided information as to how, when and where they can be in contact)	Department(s)
Coordinator: Prof. Dr. P. Pakutinskas a. o.: Prof. Dr. M. Laurinaitis	MRU LS Institute of Private Law pti@mruni.eu

3.

Cycle of course unit	Level of course unit	Type of course unit
Third cycle	Not applicable	Elective

4.

Mode of delivery	Year of study and semester when the course unit is delivered	Language of instruction
Face-to-face and (or) distance learning	I-III study year	Lithuanian, English

5.

Study requirements	
Prerequisites: Master's or equivalent degree	Co-requisites: Not applicable

6.

Recommended optional programme components
Not applicable

7.

Number of ECTS credits allocated	Student's workload	Contact work hours	Independent work hours
6	162	4	158

8.

Purpose of the course unit: programme competences to be developed			
<p>This course is aimed at developing of the ability of doctoral students to acquire, critically evaluate and apply the latest systematic knowledge of law and technology, also in creating new fundamental knowledge and original ideas, addressing strategic activity challenges and complex scientific problems, discovering the repetitions, contradictions and overlaps in regulation of different technologies, as well as the good examples and shortcomings of legal regulation, including law and different "disruptive" technologies.</p>			
Learning outcomes of the programme	Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
	Knows complex legal issues related to technology, including information technology, electronic communications, cybersecurity, other relationships arising in cyberspace or in relation with digital products and businesses, and understands how developments in these areas have affected the application of traditional legal principles.	Independent study of literature. Individual consultation with the teachers.	Exam. An alternative is to prepare an academic publication.

	Is able to solve a complex interdisciplinary task involving knowledge of law and disruptive technologies.	Independent study of literature. Individual consultation with the teachers.	Exam. An alternative is to prepare an academic publication.
	Is able to apply legal acts to answer the questions, to solve the exam tasks; also is well aware of the existing regulation, problematic issues of it, is able to formulate the proposals not only for the already-regulated legal relations, but also for the not-yet regulated "grey" areas.	Independent study of literature. Individual consultation with the teachers.	Exam. An alternative is to prepare an academic publication.
	Is able to prepare himself/herself independently according to the course program and demonstrates acquired knowledge by solving exam tasks, answering questions or preparing a scientific publication for international conference in the field of law and technology.	Independent study of literature. Individual consultation with the teachers.	Exam. An alternative is to prepare an academic publication.

9.

Course contents										
Topics	Contact work hours and planned learning activities							Independent work hours and tasks		
	Lectures	Consultations	Seminars	Training exercises	Laboratory work	Internship	Assessment	All contact work hours	Independent work hours	Tasks
1. Legal regulation of European Union and Lithuania affecting intellectual property, information technology and other technology-related fields									20	Independent study of literature.
2. Relationship between law and technology: how the technology changes the law, the sector of legal services, public legal services, what new legal relationships are created?									14	Independent study of literature.
3. Regulation, problems, trends of disruptive technologies. Disruptive technologies: definition, operating principles, trends of technological design / construct, best practices and issues. Internet of things, artificial intelligence, block chains, etc.									14	Independent study of literature.

4. Global trends in legal technology solutions, map, ecosystem, market share, strengths & weaknesses									10	Independent study of literature.
5. Legal regulation of cyber security									15	Independent study of literature.
6. Information and communication technologies and their regulation									10	Independent study of literature.
7. Problems and regulation of intellectual property in cyberspace									10	Independent study of literature.
8. Liability in cyberspace and liability in relation to digital products									10	Independent study of literature.
9. Electronic businesses and legal regulation of them. Digital games									10	Independent study of literature.
10. Law and innovation									15	Independent study of literature.
11. Legal regulation of consumer relations in electronic environment									15	Independent study of literature.
12. Privacy and data protection									15	Independent study of literature.
Overall		2				2		4	158	

10.

Assessment strategy	Weighting percentage	Period or date of assessment	Assessment criteria
Exam or academic publication (in agreement with the examination commission)	100 %	Full-time – I-II courses Part-time – I-III courses	The exam is conducted in writing and (or) verbally. Evaluation of the exam: 10: Excellent knowledge and skills. The exam score ranges between 95% and 100%. 9: Very good knowledge and skills, minor mistakes may be present. The exam score ranges from 85% to 94%. 8: Good knowledge and skills, minor mistakes are present. Exam score ranges between 75% and 84%. 7: Average knowledge and skills, mistakes are present. The exam score ranges from 65% to 74%. 6: Knowledge and skills are below average, (substantial) mistakes are present. Exam score ranges between 56% and 64%. 5: Knowledge and skills meet the minimum requirements. The exam score ranges between 50% and 55%. 4: Minimum requirements are not met. The exam score is below 50%.

			<p>Publication:</p> <p>Minimum requirements:</p> <ol style="list-style-type: none"> 1. The publication has been prepared in accordance with the requirements for an international peer-reviewed publication; 2. The publication is directly related to the subject of Law and Technology approved by the Examination Commission. <p>Evaluation of the publication:</p> <p>10: Excellent knowledge and skills. The evaluation of the publication ranges between 95% and 100%.</p> <p>9: Very good knowledge. The evaluation of the publication ranges between 85% and 94%.</p> <p>8: Good knowledge and skills, minor mistakes are present. The evaluation of the publication ranges between 75% and 84%.</p> <p>7: Average knowledge and skills, mistakes are present. The evaluation of the publication ranges between 65% and 74%.</p> <p>6: Knowledge and skills are below average, (substantial) mistakes are present. The evaluation of the publication ranges between 56% and 64%.</p> <p>5: Publication meets minimum requirements. The evaluation of the publication ranges between 50% and 55%.</p> <p>4: Minimum requirements are not met. The publication does not meet the requirements of the reviewers and of the journal.</p> <p>Note:</p> <p>Only a publication prepared in accordance with the requirements of the selected scientific journal, included in the Web of Science (Clarivate Analytics) and / or Scopus databases, will be scored 10 or 9 points.</p>
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Required reading

AI&LAW

1. Hildebrandt, Mireille. "Law as computation in the era of artificial legal intelligence: speaking law to the power of statistics." *University of Toronto Law Journal* 68, no. supplement 1 (2018): 12-35.
2. European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment, CEPEJ(2018)14, 2018-12-03.
3. Civil Law Rules on Robotics (2015/2103(INL))

FINTECH

4. Baldwin, C.Y., 2007. Where do transactions come from? Modularity, transactions, and the boundaries of firms. *Indus. Corporate Change* 17 (1), 155-195.
5. Dermish, A., Kneiding, C., Leishman, P., Ignacio, M., 2012. Branchless and mobile banking solutions for the poor: a survey of the literature. *Innovations Technol. Governance Globalization* 6 (4), 81-98.
6. Van der Boor, P., Oliveira, P., Veloso, F., 2014. Users as innovators in developing countries: the global sources of innovation and diffusion in mobile banking services. *Res. Policy* 43 (9), 1594-1607

GAMIFICATION&LAW

7. Erenli K. (2015) Gamification and Law. In: Reiners T., Wood L. (eds) Gamification in Education and Business. Springer, Cham
8. Adams, E., & Dormans, J. (2012). Game mechanics: advanced game design. New Riders. IPR
9. Meese, J. (2018). Authors, Users, and Pirates: Copyright Law and Subjectivity. MIT Press.
10. B. Halt, Gerald & John C. Donch, Jr & R. Stiles, Amber & Fesnak, Robert. (2017). Intellectual Property and Financing Strategies for Technology Startups. 10.1007/978-3-319-49217-9.

LEGALTECH

11. Lee, MinHwa, JinHyo Yun, Andreas Pyka, DongKyu Won, Fumio Kodama, Giovanni Schiuma, HangSik Park et al. "How to respond to the Fourth Industrial Revolution, or the Second Information Technology Revolution? Dynamic new combinations between technology, market, and society through open innovation." *Journal of Open Innovation: Technology, Market, and Complexity* 4, no. 3 (2018): 21.
12. Tropina, Tatiana, and Cormac Callanan. *Self-and co-regulation in cybercrime, cybersecurity and national security*. Heidelberg: Springer, 2015.
13. Mason, Stephen, and Daniel Seng, eds. *Electronic Evidence*. Institute of Advanced Legal Studies, 2017
PRIVACY AND DATA PROTECTION
14. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
15. Wagner, I., & Eckhoff, D. (2018). Technical privacy metrics: a systematic survey. *ACM Computing Surveys (CSUR)*, 51(3), 57.
16. Nissim, Kobbi, and Alexandra Wood. 2018. Is Privacy Privacy? *Philosophical transactions of the Royal Society A* 376 (2128): Spring2018. DOI 10.1098/rsta.2017.0358 ROBOLAW
17. Calo, Ryan, A. Michael Froomkin, and Ian Kerr, eds. *Robot law*. Edward Elgar Publishing, 2016.
18. Estolatan, Eric, Aldo Geuna, Marco Guerzoni, and Massimiliano Nuccio. *Mapping the Evolution of the Robotics Industry: A cross country comparison*. No. 201812. University of Turin, 2018.
19. Fernandes, Francisco Erivaldo, Guanci Yang, Ha Manh Do, and Weihua Sheng. "Detection of privacy-sensitive situations for social robots in smart homes." In *2016 IEEE International Conference on Automation Science and Engineering (CASE)*, pp. 727-732. IEEE, 2016. SEMANTICS
20. Benjamins, V. Richard, Pompeu Casanovas, Joost Breuker, and Aldo Gangemi, eds. *Law and the semantic web: legal ontologies, methodologies, legal information retrieval, and applications*. Vol. 3369. Springer, 2005.

Recommended reading

1. Stuart, Russell and Peter, Norvig (2016) *Artificial Intelligence - A Modern Approach* 3rd Ed. Berkeley.
2. Hildebrandt, Mireille. "Law as computation in the era of artificial legal intelligence: speaking law to the power of statistics." *University of Toronto Law Journal* 68, no. supplement 1 (2018): 12-35.
3. Erdélyi, Olivia J., and Judy Goldsmith. "Regulating artificial intelligence: Proposal for a global solution." In *Proceedings of the 2018 AAI/ACM Conference on AI, Ethics, and Society*, pp. 95-101. ACM, 2018.
4. Bench-Capon, Trevor. "Argument in artificial intelligence and law." *Artificial Intelligence and Law* 5, no. 4 (1997): 249-261.
5. Goltz, Nachshon Sean, Addison Cameron-Huff, and Giulia Dondoli. "Rethinking Global-Regulation: world's law meets artificial intelligence." *Information & Communications Technology Law* (2019): 1-10.
6. Pham, T.T., Wong, G., Le, N.D., Brockhaus, M., 2016. The distribution of payment for forest environmental services (PFES) in Vietnam: research evidence to inform payment guidelines. Occasional Paper 163. CIFOR, Bogor, Indonesia.
7. Aker, J., Boumnijel, R., McClelland, A., Tierney, N., 2014. Payment Mechanisms and Antipoverty Programs: Evidence From a Mobile Money Cash Transfer Experiment in Niger, CGD Working Paper 268. Center for Global Development (August).
8. GSMA, 2016. 2015 State of the Industry Report: Mobile Money: p. 73 http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/11/SOTIR_2015.pdf.
9. E., Muradian, R., 2014. Social equity matters in payments for ecosystem services. *Bioscience* 64:1027-1036. <http://dx.doi.org/10.1093/biosci/biu146>.

10. Gupta, S., 2013. The Mobile Banking and Payment Revolution. *European Financial Review*, February-March, pp. 3-6.
11. Nambisan, Padma, author. *An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology*. London :Elsevier : Academic Press, 2017. Print.
12. Baudry, Marc & Dumont, Beatrice. (2017). Patents: Prompting or restricting innovation? 10.1002/9781119452911.
13. The Directive on the enforcement of intellectual property rights.
14. Chawki, Mohamed, Ashraf Darwish, Mohammad Ayoub Khan, and Sapna Tyagi. *Cybercrime, digital forensics and jurisdiction*. Vol. 593. Springer, 2015.
15. Owen, Tim, Wayne Noble, and Faye Christabel Speed. *New perspectives on cybercrime*. Springer, 2017.
16. Schell, J. (2014). *The Art of Game Design: A book of lenses*. AK Peters/CRC Press.
17. Rigby, S., & Ryan, R. M. (2011). *Glued to games: How video games draw us in and hold us spellbound: How video games draw us in and hold us spellbound*. ABC-CLIO.
18. Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of human-computer studies*, 74, 14-31.
19. Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining gamification. In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9-15). ACM.
20. Huotari, K., & Hamari, J. (2012, October). Defining gamification: a service marketing perspective. In *Proceeding of the 16th international academic MindTrek conference* (pp. 17-22). ACM.
22. Picker, R. C. (1994). *An introduction to game theory and the law*.
23. Bouki, Vassiliki, Daphne Economou, and Paresh Kathrani. "“Gamification” and legal education: A game based application for teaching university law students." In *2014 International Conference on Interactive Mobile Communication Technologies and Learning (IMCL2014)*, pp. 213-216. IEEE, 2014.
24. Sartor, Giovanni, Pompeu Casanovas, Mariangela Biasiotti, and Meritxell Fernández-Barrera, eds. *Approaches to legal ontologies: theories, domains, methodologies*. Vol. 1. Springer Science & Business Media, 2010.
25. Bizer, Christian, Tom Heath, Kingsley Idehen, and Tim Berners-Lee. "Linked data on the web (LDOW2008)." In *Proceedings of the 17th international conference on World Wide Web*, pp. 1265-1266. ACM, 2008.
26. Berners-Lee, Tim, James Hendler, and Ora Lassila. "The semantic web." *Scientific American* 284, no. 5 (2001): 28-37.
27. Horrocks, Ian, Bijan Parsia, Peter Patel-Schneider, and James Hendler. "Semantic web architecture: Stack or two towers?." In *International Workshop on Principles and Practice of Semantic Web Reasoning*, pp. 37-41. Springer, Berlin, Heidelberg, 2005.
28. Corrales, M., Jurčys, P., & Kousiouris, G. (2019). Smart Contracts and Smart Disclosure: Coding a GDPR Compliance Framework. In *Legal Tech, Smart Contracts and Blockchain* (pp. 189-220). Springer, Singapore.
29. Harašta, J. (2018). Legally critical: Defining critical infrastructure in an interconnected world. *International Journal of Critical Infrastructure Protection*, 21, 47-56.
30. Srinivas, J., Das, A. K., & Kumar, N. (2019). Government regulations in cyber security: Framework, standards and recommendations. *Future Generation Computer Systems*, 92, 178-188.
31. Fenz, S., & Neubauer, T. (2018). Ontology-based information security compliance determination and control selection on the example of ISO 27002. *Information & Computer Security*, 26(5), 551-567.
32. Hall, H. K. (2018). Oversharenting: Is It Really Your Story to Tell?, 33 *J. Marshall J. Info. Tech. & Privacy L.* 121 (2018). *The John Marshall Journal of Information Technology & Privacy Law*, 33(3), 1.
33. Directive (EU) 2015/2436 to approximate the laws of the Members States relating to trade marks, 16 December 2015
34. Regulation (EU) 2015/2424 amending Council Regulation (EC) No 207/2009 on the Community trade mark and Commission Regulation No 2868/95 implementing Council Regulation (EC) No 40/94 on the Community trade mark, and repealing Commission Regulation (EC) No 2869/95 on the fees payable to the Office for Harmonization in the Internal Market (Trade Marks and Designs), 16 December 2015
35. Council Regulation (EC) No 6/2002 of 12 December 2001 on Community designs.

36. Commission Regulation (EC) No 2245/2002 of 21 October 2002 implementing Council Regulation (EC) No 6/2002 on Community designs
37. Commission Regulation (EC) 2246/2002 of 16 December 2002 on the fees payable in respect of the registration of Community designs
38. Directive 98/71/EC on the legal protection of designs
39. Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure
40. Paris Convention for the Protection of Industrial Property
41. Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods
42. Lisbon Agreement for the Protection of Appellations of Origin and their International Registration
43. Madrid Agreement Concerning the International Registration of Marks
44. Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks
45. TRIPS Agreement
46. Directive on the harmonisation of certain aspects of copyright and related rights in the information society ("InfoSoc Directive"), 22 May 2001
47. Directive on rental right and lending right and on certain rights related to copyright in the field of intellectual property ("Rental and Lending Directive"), 12 December 2006
48. Directive on the resale right for the benefit of the author of an original work of art ("Resale Right Directive"), 27 September 2001
49. Directive on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission ("Satellite and Cable Directive"), 27 September 1993
50. Directive on the legal protection of computer programs ("Software Directive"), 23 April 2009
51. Directive on the enforcement of intellectual property right ("IPRED"), 29 April 2004
52. Directive on the legal protection of databases ("Database Directive"), 11 March 1996
53. Directive on the term of protection of copyright and certain related rights amending the previous 2006 Directive ("Term Directive"), 27 September 2011
54. Directive on certain permitted uses of orphan works ("Orphan Works Directive"), 25 October 2012
55. Directive on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market ("CRM Directive"), 26 February 2014
56. Directive on certain permitted uses of certain works and other subject matter protected by copyright and related rights for the benefit of persons who are blind, visually impaired or otherwise print-disabled (Directive implementing the Marrakech Treaty in the EU), 13 September 2017
57. Regulation on the cross-border exchange between the Union and third countries of accessible format copies of certain works and other subject matter protected by copyright and related rights for the benefit of persons who are blind, visually impaired or otherwise print-disabled (Regulation implementing the Marrakech Treaty in the EU), 13 September 2017
58. Regulation on cross-border portability of online content services in the internal market ("Portability Regulation"), 14 June 2017.
59. Berne Convention for the Protection of Literary and Artistic Works.
60. Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations
61. WIPO Copyright Treaty (WCT)
62. WIPO Performances and Phonograms Treaty.
63. Beijing Treaty on Audiovisual Performances.
64. Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled.

Approved by Mykolas Romeris University and Vytautas Magnus University Doctoral Committee in Law on 18 April 2024, Decision No. 10-174 (4.4 E-32002).