

## Scope of the humanities and social sciences and Poland's National Smart Specializations

Smart learning		National Smart Specialization (KIS)
Module 1: Smart higher education for the smart economy and its personnel  Smart institutions and organizations		<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Shaping the market of creators and consumers:</p> <ul style="list-style-type: none"> <li>• <i>Tools and applications for creating innovative educational and presentation models using multimedia and interactivity</i></li> </ul>
Module 2: Training in cognitive social skills	Cognitive training	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Shaping the market of creators and consumers:</p> <ul style="list-style-type: none"> <li>• <i>Tools and applications for creating innovative educational and presentation models using multimedia and interactivity</i></li> </ul>
	Social skills training	<p><b>KIS 12 Smart networks and geoinformation technologies:</b> Management of information in smart networks:</p> <ul style="list-style-type: none"> <li>• <i>Artificial intelligence</i></li> <li>• <i>Processing of complex, large, dynamic and varied data sets (big data, data mining)</i></li> </ul>
Module 3: E Mental health—improved quality of life and well-being		<p><b>KIS 1 Diagnosis and treatment of civilizational diseases and in personalized medicine:</b></p> <ul style="list-style-type: none"> <li>• <i>Telemedicine in diagnostics and therapy</i></li> <li>• <i>Clinical trials</i></li> </ul> <p><b>KIS 15 Photonics:</b> Optoelectronic devices and systems</p> <ul style="list-style-type: none"> <li>• <i>Optoelectronic diagnostic, therapeutic and analytic apparatus, exploiting the specific properties of various sources of light, often based on lasers or combined with fibre optics and the possibility of imaging and processing and analysis of images for applications in medicine</i></li> </ul>

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Module 4: Social and economic importance of linguistics: research and application	Computer linguistics	<p><b>KIS 1 Medical engineering technologies, including medical biotechnologies:</b> Medical IT tools</p> <ul style="list-style-type: none"> <li>• <i>Development and growth of IT solutions for collection and analysis of medical data for diagnostic and therapeutic purposes, in particular IT systems for gathering, processing and analysis of medical data and information through analysis of text, sound, image or other forms necessary for diagnosis, treatment and monitoring of patients</i></li> </ul> <p><b>KIS 16 Smart creative technologies:</b> Multimedia: Archiving and smart access to content</p> <ul style="list-style-type: none"> <li>• <i>Models, technologies and applications for secure long-term storage of content recorded in analogue or digital form</i></li> <li>• <i>Technologies for searching or accessing content, including semantic analyzers of image and sound as well as systems for smart indexing of multimedia content</i></li> <li>• <i>Systems for management of complex digital data and solutions consistent with international standards enabling their intersystem exchange</i></li> </ul>
	Applied linguistics	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Support and optimization of processes</p> <ul style="list-style-type: none"> <li>• <i>Development of innovative methods or models supporting, optimizing, and controlling processes of production and dissemination of content</i></li> <li>• <i>Tools and methods employing advanced methods for evaluation of the response and psychological and emotional state of content recipients</i></li> <li>• <i>Tools automating and facilitating the discovery of errors, tests generated using algorithms and procedures in content creation processes</i></li> </ul>

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		<ul style="list-style-type: none"> <li>• <i>Tools support communication, exchange and transmission of data within teams creating content</i></li> </ul>
	Descriptive linguistics (Polish and foreign languages)	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Shaping the market of creators and consumers</p> <ul style="list-style-type: none"> <li>• <i>Tools and applications for creating innovative educational and presentation models using multimedia and interactivity</i></li> <li>• <i>Technologies and solutions supporting innovative forms of dissemination of content among various social groups</i></li> </ul>
	Historic linguistics	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Distribution and management of content</p> <ul style="list-style-type: none"> <li>• <i>Creation of innovative channels for distribution of content aimed at various social groups (including groups marginalized by health, economically, geographically and socially), including smart streaming of content, delivery of content in real time</i></li> <li>• <i>Models, tools, technologies, applications and interfaces for smart dissemination and distribution, among other things by ensuring permanent identification and effective protection of copies against unlawful access and dissemination</i></li> <li>• <i>Tools, methods, and technologies for measurement and controls for maintaining the correct parameters for distribution of content</i></li> <li>• <i>Systems for managing data resources of great complexity, dynamism and dimensions (big data)</i></li> <li>• <i>Solutions enabling intersystem exchange of digital data containing numerous elements</i></li> <li>• <i>Creation of platforms and functionalities for multi-person or interactive participation by users in transmission of content using various channels of distribution</i></li> </ul>

Smart learning		National Smart Specialization (KIS)
		<ul style="list-style-type: none"> <li>• <i>Development of platforms connected with mobile and network transmission of content</i></li> </ul>
	Speech therapy	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Distribution and management of content</p> <ul style="list-style-type: none"> <li>• <i>Creation of innovative channels for distribution of content aimed at various social groups (including groups marginalized by health, economically, geographically and socially), including smart streaming of content, delivery of content in real time</i></li> </ul>
Module 5: National heritage	Historic research	<p><b>KIS 12 Smart networks and geoinformation technologies:</b> Management of information in smart networks:</p> <ul style="list-style-type: none"> <li>• <i>Processing of complex, large, dynamic and varied data sets (big data, data mining)</i></li> </ul> <p><b>KIS 15 Photonics:</b> Optoelectronic devices and systems</p>
	Social impact (including increased intellectual, cognitive, professional, and innovative potential in education and on the labour market)	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Shaping the market of creators and consumers:</p> <ul style="list-style-type: none"> <li>• <i>Models and tools for remote and direct measurement and analysis and evaluation of preferences of recipients in order to increase the effectiveness of creative projects meeting higher needs of citizens: measurements using subjective and objective indicators</i></li> <li>• <i>Models and tools for personalization of audiovisual transmission based on recipients' preferences and behaviours</i></li> <li>• <i>Development of innovative business models enabling co-financing and engagement of recipients in the process of creation and realization of audiovisual content and interactive solutions</i></li> <li>• <i>Tools and applications for creating innovative educational and presentation models using multimedia and interactivity</i></li> </ul>

Smart learning		National Smart Specialization (KIS)
		<ul style="list-style-type: none"> <li>Technologies and solutions supporting innovative forms of dissemination of content among various social groups</li> </ul>
	Significance of humanities research and local linguistic and cultural heritage for growth of the social economy	<p><b>KIS 16 Smart creative technologies:</b> Multimedia: Distribution and management of content</p> <ul style="list-style-type: none"> <li>Creation of innovative channels for distribution of content aimed at various social groups (including groups marginalized by health, economically, geographically and socially), including smart streaming of content, delivery of content in real time</li> <li>Models, tools, technologies, applications and interfaces for smart dissemination and distribution, among other things by ensuring permanent identification and effective protection of copies against unlawful access and dissemination</li> <li>Tools, methods, and technologies for measurements and controls for maintaining the correct parameters for distribution of content</li> <li>Systems for managing data resources of great complexity, dynamism and dimensions (big data)</li> <li>Solutions enabling intersystem exchange of digital data containing numerous elements</li> <li>Creation of platforms and functionalities for multi-person or interactive participation by users in transmission of content using various channels of distribution</li> <li>Development of platforms connected with mobile and network transmission of content</li> </ul>
	Cultural tourism	<p><b>KIS 12 Smart networks and geoinformation technologies:</b></p> <p>Management of information in smart networks</p> <ul style="list-style-type: none"> <li>Exploiting social networks for obtaining and analyzing data and distribution of information</li> </ul> <p>Positioning and navigation</p>

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		<ul style="list-style-type: none"> <li>• <i>Navigation and location applications using information from numerous sources in real time</i></li> <li>• <i>Navigation and location applications with innovative methods of information transmission (including cartographic), in particular innovative imaging methods</i></li> </ul>
	Management of the cultural landscape	<p><b>KIS 12 Smart networks and geoinformation technologies:</b> Processing, analysis, accessing and visualization of geoinformation:</p> <ul style="list-style-type: none"> <li>• <i>Monitoring changes in spaces (e.g. based on data from the Copernicus program, based on data from laser scanning) and the resulting updating of spatial data</i></li> </ul>