	MATERIALS SCIENCE AND NANOENGINEERING PROGRAM OUTCOMES	NATIONAL QUALIFICATIONS OF RELATED FIELDS*																																												
		ENGINEERING & ENGINEERING TRADES																							MANUFACTURING & PROCESSING																						
		A1	B1	B2	B3	B4	B5	C1	C2	D1	D2	D3	D4	D5	D6	D7	E1	E2	E3	E4	E5	F1	F2	F3	A1	B1	B2	B3	B4	B5	C1	C2	D1	D2	D3	D4	D5	D6	D7	E1	E2	E3	E4	E5	F1	F2	F3
1	Understand the world, their country, their society, as well as themselves and have awareness of ethical problems, social rights, values and responsibility to the self and to others.																				X	X	X	X																				X	X	X	X
2	Understand different disciplines from natural and social sciences to mathematics and art, and develop interdisciplinary approaches in thinking and practice.		X									X														X									X												
3	Think critically, follow innovations and developments in science and technology, demonstrate personal and organizational entrepreneurship and engage in life-long learning in various subjects; have the ability to continue to educate him/herself.					X			X	X	X				X					X	X			X					X			X	X	X				X					X	X			X
4	Communicate effectively in Turkish and English by oral, written, graphical and technological means.																	X																							X						
5	Take individual and team responsibility, function effectively and respectively as an individual and a member or a leader of a team; and have the skills to work effectively in multi-disciplinary teams.							X								X							X								X								X							X	
6	Possess sufficient knowledge of mathematics, science and program-specific engineering topics; use theoretical and applied knowledge of these areas in complex engineering problems.	X	X									X													X	X									X												
7	Identify, define, formulate and solve complex engineering problems; choose and apply suitable analysis and modeling methods for this purpose.			X		X							X		X												X		X							X		X									
8	Develop, choose and use modern techniques and tools that are needed for analysis and solution of complex problems faced in engineering applications; possess knowledge of standards used in engineering applications; use information technologies effectively.					X											X												X											X							
9	Have the ability to design a complex system, process, instrument or a product under realistic constraints and conditions, with the goal of fulfilling specified needs; apply modern design techniques for this purpose.				X									X														X									X										
10	Design and conduct experiments, collect data, analyze and interpret the results to investigate complex engineering problems or program-specific research areas.						X																							X																	
11	Possess knowledge of business practices such as project management, risk management and change management; awareness on innovation; knowledge of sustainable development.																						X																							X	
12	Possess knowledge of impact of engineering solutions in a global, economic, environmental, health and societal context; knowledge of contemporary issues; awareness on legal outcomes of engineering solutions; knowledge of behavior according to ethical principles, understanding of professional and ethical responsibility.																				X																							X			
13	Have the ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.																	X	X																						X	X					
14	Applying fundamental and advanced knowledge of natural sciences as well as engineering principles to develop and design new materials and establish the relation between internal structure and physical properties using experimental, computational and theoretical tools.			X	X								X	X													X	X								X	X										
15	Merging the existing knowledge on physical properties, design limits and fabrication methods in materials selection for a particular application or to resolve material performance related problems.			X	X								X	X													X	X								X	X										
16	Predicting and understanding the behavior of a material under use in a specific environment knowing the internal structure or vice versa.			X	X								X	X													X	X								X	X										

* Please check **http://tyyc.yok.gov.tr/** for the list of national qualifications.

A: KNOWLEDGE, Theoretical & Factual
B: SKILL, Cognitive & Applied
C: COMPETENCY, Working Independently & Taking Responsibility
D: COMPETENCY, Ability to Learn
E: COMPETENCY, Communication & Social Competencies
F: COMPETENCY, Field Specific