Course title in English	**The molecular basis of the amyloidogenic diseases**
Course title in Polish	Molekularne podstawy chorób amyloidogennych
Course code	
Type of course	Lecture
Level of course	PhD
Year of study	1-4
Semester/trimester	2/4/6/8
Number of hours/credits allocated	30/2
Name of lecturer	Sylwia Rodziewicz-Motowidło
Objective of the course (expected learning outcomes and competences to be acquired)	*Knowledge*: 1. student knows the mechanisms of amyloid fibril formation 2. student knows the structure of various amyloid fibrils 3. student knows the causes of amyloid diseases at the molecular level *Skills*: The doctoral student uses the acquired knowledge on the molecular basis of the formation of amyloid diseases. *Social competence*: 1. student understands the role of environmental factors in the development of amyloid diseases and the importance of appropriate pro-health behaviors in reducing the risk of amyloidosis 2. student knows how to cooperate in a group
Prerequisites	Formal requirements: no formal requirements Prerequisites: knowledge of the basics in the field of organic chemistry: functional groups occurring in organic compounds, the structure of amino acids,

	peptides, and proteins, the influence of external factors on conformational changes of peptides and proteins, knowledge of basic physicochemical techniques used in peptide and protein chemistry.
Course contents	The lecture will cover the following topics: classification of amyloidogenic diseases; amyloid fibril structure; folding of amyloid proteins; the role of post-translational modifications in the formation of amyloid fibrils; the role of lipid modulators in amyloid formation; the mechanism of amyloid fibril formation; amyloidogenic proteins, structure and function (β-amyloid, prion protein, immunoglobulin, transthyretin, gelsolin, lysozyme, fibrinogen, β-microglobulin, cystatin C, amyloid-forming hormones), amyloid diseases (amyloidosis).
Recommended reading	1. Amyloid, prions and other protein aggregates/ ed. By Ronald Wetzel. Methods in Enzymology vol. 309, San Diego, Calif,: Academic Press, cop. 1999 2. Protein misfolding diseases: current and emerging principles and therapies/ ed. By Marina Ramirez-Alvarado, Jeffrey W. Kelly, Christopher M. Dobson, Wiley Series in Protein and Peptide Science, Hoboken: Wiley, A. John Wiley&Sons, cop. 2010 3. Badania fibrylizacji ludzkiego osoczowego białka amyloidu A oraz jego krótkich N-terminalnych fragmentów / Marta Sosnowska; Uniwersytet Gdański. Wydział Chemii.*Sosnowska, Marta (biochemia).* Praca doktorska, Gdańsk, 2015 [Fibrillization studies of human amyloid A plasma protein and its short N-terminal fragments] 4. Amyloid structure, function, and molecular mechanisms. Pt. 2 / guest eds.: Sheena Radford and Jonathan Weissman., JMB Journal of Molecular Biology, vol. 421, iss. 4/5, Amsterdam [etc.] : Elsevier, 2012. 5. Amyloid structure, function, and molecular mechanisms. Pt. 1 / guest eds.: Shenna Radford and Jonathan Weissman. JMB Journal of Molecular Biology, vol. 421, iss. 2/3, Amsterdam [etc.] : Elsevier, 2012.
Teaching methods	Lecture with multimedia presentation

Assessment methods	Determining the final grade based on the presentation and attendance
Language of instruction	Polish