**Oral Exam Questions for 2019 Version of English Language Philosophy and Methodology of Science Course for HSE Graduate Students (Instructor: Brian McLoone)**

1. The genesis of science, its cultural conditions and circumstances. Science and practical knowledge.

2. Galileo and experimental science

3. F. Bacon: philosophical foundations of modern experimental science.

4. R. Descartes as philosopher and scientist. Doctrine of method.

5. Newton and formation of the classical ideal of scientific knowledge.

6. "Copernican Revolution" of Immanuel Kant.

7. Formation of disciplinary science in the XIX century. Science as a vocation and profession (M. Weber).

8. The dispute about the methodology of humanitarian and historical knowledge in the XIX century.

9. Logical positivism (Vienna Circle) and its role in the development of philosophy of science.

10. Empirical and theoretical levels of scientific knowledge. Hypothetico-deductive method of building a scientific theory.

11. Scientific theory as a fundamental unity of scientific knowledge. Structure and types of scientific theories.

12. Scientific experiment and its types. Thought experiments.

13. Scientific fact and its theoretical interpretation. Types of scientific explanation. Explanation and prediction.

14. Understanding of classical and non-classical science. Problem of observer.

15. Demarcation problem: verification and falsification (R. Carnap, K. Popper).

16. Scientific revolutions (postpositivism: scientific knowledge: T. Kuhn, I. Lakatos).

17. Concept of scientific community.

18. Methodological meaning of the concepts of "paradigm", "scientific community", "normal science", "scientific revolution" in the concept of T. Kuhn.

19. Methodology of research programs of I. Lakatos.

20. Thematic analysis of science by J. Holton. Themes as invariant structures in the development of scientific knowledge.

21. The concepts of "thinking style" and "thinking collective" of L. Fleck.

22. The concept of scientific picture of the world. Ideals and norms of scientific research.

23. Methodology of modern theory of complex self-organizing systems (synergetics).

24. Strong program in knowledge sociology (D. Bloor).

25. "Ethnography of science" by Latour and Woolgar. Main ideas of the approach.

26. Classical and non-classical ideal of rationality.