Guide to the Complex exam

(1) Each doctoral candidate must take the Complex exam at the end of the fourth semester, according to the program he/she registered to at the beginning of the second year (third semester). The assumption is that this is one of the three HKDI programs within which the doctoral candidate started his/her PhD studies.

(2) The **dissertation part** of the Complex exam takes place during the annual Report Day (course KÉM/REP2) in the form of an English-language presentation (usually 15 minutes) followed by a discussion (Q&A) session (usually 5 minutes). It is mandatory to participate in the dissertation part. If there is a clear and well supported case disallowing participation of the doctoral candidate in this part of the exam during the Report Day, the head of HKDI can waive the participation after receiving a formal written request. It is the head of HKDI who determines how the dissertation part can be completed in this case. The default is that the dissertation part of the Complex exam takes place during the theory part of the Complex exam. Students receiving ÚNKP-B fellowships are allowed to deliver their dissertation lecture during the ÚNKP-B conference (thus, it is requested that the doctoral candidate should give sufficient detail about the research results achieved during the first two years of his/her PhD study as part of the conference presentation.

(3) During the **theory part** of the Complex exam two exams, one compulsory and one optional, must be taken. The **compulsory part** of the Complex exam is the so-called „Grant proposal writing". The Grant proposal must be prepared in English according to the guide and a template provided by HKDI. The completed Grant proposal must be sent to the head of the program electronically (PDF). The deadline precedes, by two weeks, the first part of the Complex exam. The topic of the Grant proposal must be significantly different from the main research area of the doctoral candidate. Upon the request of the head of HKDI, the doctoral candidate must submit three grant proposal topics by a pre-defined deadline, and the head of the program will choose the topic to be prepared two weeks after the deadline. The exam starts with a brief (2 minutes) presentation of the selected research topic, followed by a Q&A session concerning the grant proposal and the chosen optional exam topic.

(4) **Optional topics** of the Complex exam (selected by the doctoral candidate):

Synthetic chemistry, organic and biomolecular chemistry program

1. Organic chemistry I
2. Organic chemistry II
3. Inorganic chemistry
4. Polymer chemistry

Theoretical and physical chemistry, structural chemistry program

1. Physical chemistry
2. Structural chemistry
3. Theoretical chemistry

Analytical chemistry, materials science, electrochemistry, colloidal chemistry and environmental chemistry program

1. Analytical chemistry
2. Electrochemistry
3. Colloidal chemistry
4. Nuclear chemistry
5. Environmental chemistry

(5) The material covered during the exam in each of these topics is selected by the head of the program. This must be done before the end of March and it may change year after year. The theory part of the exam may be a written exam.

(6) The language of the Complex exam is English, the exam must be taken in front of an examination panel and it is open to the public. The panel consists of at least three members, at least one third of the panel members should not be a paid employee of the institution running the doctoral school. The head of the examination panel must be a professor, a Professor Emeritus, or must held the degree of doctor of MTA (doctor of science). All members of the panel must have a scientific degree. The panel is chosen by the Council of HKDI following the proposal of the heads of the programs. The advisor of the doctoral candidate taking the exam must not be a member of the examination panel. The doctoral student must submit a maximum two pages long report about his/her research activities during the first two years of the School, listing his/her publications (including the DOIs of the published papers) and conference attendances, as well as all other scientifically relevant achievements. This summary report must be signed by the supervisor who may write brief comments about the students' achievements helping the evaluation work of the panel. It is not necessary to provide reprints of the published papers.

(7) The examination panel evaluates separately the dissertation and the theory parts of the Complex exam. The examination panel prepares a written report about the exam. The results of the exam must be announced during the theory part of the exam. The evaluation results in either a fail or a passed mark. If the doctoral candidate fails in any section of the theory part of the exam, this part of the exam can be repeated during the same semester. The dissertation part of the exam cannot be repeated.

(8) Both the dissertation and the theory parts of the Complex exam may be held the traditional way (lecture room, physical presence), or it can be executed electronically. Either way the exam is open to the public.

Supplementary material (2020): (1) Grant Proposal Writing file and guide. (2) Exam topics for each subject. (3) Application form for the Complex exam.

Supplementary learning material (2020):

Organic chemistry I and II: T. W. Graham Solomons, Craig B. Fryhle, Scott A. Snyder, Solomons' Organic Chemistry, 12th edition, Global edition

Organic chemistry I (classic, synthetic and organometallic chemistry): chapters 5, 9, 21, 22, 23, 24, and 25

Organic chemistry II (chemistry of natural compounds (*e.g.*, peptides, proteins, and sugars)): chapters 1-20

Physical chemistry: Atkins, Physical chemistry and another textbook chosen by the head of the program relevant to the research of the doctoral candidate

Structural chemistry: (a) D. W. H. Rankin, Norbert Mitzel, Carole Morrison: Structural Methods in Molecular Inorganic Chemistry, Wiley, 2013; (b) J. M. Hollas (Wiley, 2004): Modern Spectroscopy.

Theoretical chemistry: Attila Szabo, Neil S. Ostlund: Modern Quantum Chemistry: Introduction to Advanced Electronic Structure Theory, Dover: New York, 1996

Analytical chemistry: Daniel C. Harris, Quantitative Chemical Analysis 8th Ed., Chp. 3-5, 14, 16 and 17-25

Colloidal chemistry: D. J. Shaw. Introduction to Colloid and Surface Chemistry, 4th ed., Butterworth ISBN 07506 11820

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EÖTVÖS LORÁND TUDOMÁNYEGYETEM

Jelentkezési lap komplex vizsgára *

Alulírott komplex vizsgára bocsátásomat kérem a(z) tudományág doktori iskolájának (szakterületén).

A jelentkező neve: **Születési neve:**

Anyja neve: **Állampolgársága:**

Születési helye (város/megye/ország):

Születési év: **hó:** **nap:**

Hallgatói azonosító kód:

ELTE azonosító kód hiányában a személyi igazolvány száma:

A doktori képzés nyelve: magyar/idegen (éspedig) nyelv

A doktori képzés típusa: államilag finanszírozott/önköltséges:

A jelentkező doktori képzéséért felelős tanszék (intézet, kutatóhely) megnevezése:

A témavezető neve és tudományos fokozata:

A témavezető munkahelye:

A doktori fokozatszerzési eljárás nyelve: magyar/idegen (éspedig) nyelv

A doktori téma megnevezése:

Kelt:

a jelentkező aláírása

A jelentkezési lap nyomtatott betűkkel vagy írógéppel/számítógéppel töltendő ki és azt a Doktori Csoport részére kell határidőig eljuttatni.

* A doktori képzés nélkül komplex vizsgára jelentkezőnek a „Jelentkezés doktori (PhD) képzésre” c. nyomtatványt is ki kell töltenie.