

# **National Science Library, Chinese Academy of Sciences**

## **Basic Requirements for PhD Examination of Library science and informatics**

### **1.Course's Name:Fundamental Theory of Library Science**

This course mainly assesses the candidates' mastery of basic theoretical knowledge of library science.It demands students to focus on the library of the new changes and challenges, the trend and characteristics of library development, the influence on the development of the library with the change of information, publishing and academic communication environment, the change of library basic business model, the library new service pattern, the hot issues of library development, informatics and its impact on development of library science in the network environment,.Candidates should be able to use the knowledge they have learned comprehensively to analyze the problems that need to be solved in the development of the current library, and put forward ideas and methods to solve the problems.From the front of the subject and the background of international development, we should condense the subject direction, be good at comparative analysis and put forward development strategies.

### **2、 Course's Name:Technology and Method of Library Science**

This course mainly assesses the candidates' mastery of the knowledge and methods of library information resource construction and management, including the technologies and methods of information processing of various types and carriers, user information services, subject services and information services.It mainly involves: various types of library collection resources construction policies, principles, ways and methods, theories and methods of the theme and classification, principle and basic method of computer retrieval, the type of literature database, data organization methods, database construction methods and procedure, and the most famous domestic and foreign literature databases and retrieval system, network information resource organization, processing and accessing method, the pattern of information service under the network environment, method and characteristics, informetrics, intelligence research and analysis of intelligence, theory and research method of think-tank, etc. From the perspective of history, current situation and future development, students are required to grasp the development trend of various methods and technologies. Paying attention on the combination of theory and practise, home and abroad.

### **3、 Course's Name:Theory of Informatics**

This course mainly assesses the candidates to grasp the situation of information science basic theory knowledge, including the nature, phenomenon and process of intelligence, object and content of informatics research, information exchange, retrieval, report, research, service, organization and management, informatics theory paradigm, informatics discipline construction direction,etc.It also includes the field of information management, knowledge management, and other relevant basic knowledge.It asks the candidates to have independent thinking in hot spot and development trend of informatics research at home and abroad.

### **4、 Course's Name:Information Analysis and Method**

This course mainly assesses the candidates' mastery of knowledge of information analysis research, scientometrics and competitive intelligence, methods and techniques, including information analysis and processing, information consulting services, the application of the basic methods and tools of software, and the corresponding information analysis system.It also includes competitive intelligence, scientometrics and intelligence of quantitative analysis, citation analysis, literature knowledge discovery in science and technology assessment, prediction and the application of the enterprise strategy consulting and other basic knowledge and method. From the perspective

of current situation and future development, candidates should grasp the development trend of all kinds of methods and techniques and integrate theory with practice. .

#### **5、 Course's Name:Information Retrieval**

This course mainly assesses the candidates' ability to grasp the basic principles, methods and technologies of information retrieval and to develop information retrieval system. Among them, the basic principles, methods and technologies of information retrieval mainly include the concept and development of information retrieval, retrieval language, retrieval algorithm, information retrieval technology, principles of network information retrieval, search engine, organization of information retrieval system, analysis and design of information retrieval system, evaluation of information retrieval system, etc. The assessment of this course focuses on the technical principle and the technical implementation level. Candidates should pay attention to the connection between theory and practice, and understand the latest development of information retrieval.

#### **6、 Course's Name:Computer Foundation and Program Design**

This course mainly assesses the candidates' basic knowledge of computer and their ability to develop and apply information system. This course mainly covers data structure, database principles, programming language, software engineering (system analysis and design) and other fields. Candidates should focus on the basic concepts, important algorithms and key technologies, and the connection between theory and practice. Through analysis, comparison, synthesis and other methods, candidates should have a deep understanding of the core content of these fields. Candidates are required to be proficient in at least one programming language, common database management system's deeper understanding, and have some experience in system development.