



СИБИРСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ
SIBERIAN FEDERAL UNIVERSITY

Pedagogy and Psychology in Higher Education

Course Guide

Krasnoyarsk, 2020.

Siberian Federal University

Pedagogy and Psychology in Higher Education

Course Guide

This course contributes to the requirements for the Degree of Candidate of Science in Computer Science.

Krasnoyarsk, 2020

Table of Contents

1. Course Description	0
1.1 Course overview	1
1.2 Special features	1
1.3 Course aims and objectives	1
1.4 Learning outcomes	2
2. Course Lecturer, Contact Information	3
3. Prerequisites	3
4. Course Outline	4
4.1 Course requirements	6
4.1.1 Web-page of the course	6
4.1.2 Required reading	6
4.1.3 Course materials	7
4.1.4 Required feedbacks	7
4.2 Course Structure	8
4.3 Time schedule of the course and course outline	8
5. Assessment	16
6. Attendance Policy	18
7. Required Course Participation	18
8. Facilities, Equipment and Software	18
Annex 1 Example of Self-Study Assignment	19
Annex 1 Example of Class Assignment	20
Annex 3 Example of Final Oral Exam Task	21

1. Course Description

This course contributes to the requirements for the Degree of Candidate of Science in Computer Science.

Course period	1 semester Third semester: from October, the 1st to February, the 1st (18 weeks)
Study credits	3 ECTS credits
Duration	108 hours
Language of instruction	English
Academic requirements	<ul style="list-style-type: none">– MSc degree in “Informatics and Computer Science”, or equivalent (transcript of records);– good command of English (certificate or other official document)

1.1 Course overview

“Pedagogy and Psychology in Higher Education” is a core course.

The course “Pedagogy and Psychology in Higher Education” is an important element of the professional training of master’s students in the field of “Informatics and Computer Science”, which forms ideas about the processes of teaching and educating students’ personality.

The course program is focused on theoretical and practical training.

The course acquaints students with the general problems of higher education pedagogy, its main achievements, shifts and trends in the development of higher education pedagogy, the basics of designing and organizing cooperative activities of an educator and students; theoretical and methodological foundations of education and professional training, methods of forming pedagogical skills.

1.2 Special features

The students will be able to conceive and design their own project of a lesson or lecture using the ideas of integrated and active learning technologies.

1.3 Course aims and objectives

Course Aims

- The aim of the course is to provide students with a general idea of pedagogical activity in the higher education system.

Course Objectives

- to familiarize students with the trends in the world educational environment;
- to acquaint students with the basics of pedagogical activity in higher education, means of interaction and management of the pedagogical process;

- to teach students to use pedagogical methods, teaching technologies and develop pedagogical skills.

1.4 Learning outcomes

By the end of the course, students will know:

- current trends in the development of the higher education system;
- the main categories of pedagogy, the specifics and goals of higher education pedagogy;
- the principles of organizing a holistic pedagogical process at university;
- the main pedagogical paradigms, the specifics of the humanistic pedagogical paradigm;
- the classifications of teaching methods and forms of organizing the pedagogical process at university;
- the concept of excellence in teaching;
- the basic principles of building educational programs and curriculum, incl. in the field of Informatics and Computer Engineering.

By the end of the course, students will be able to:

- use the interrelation of disciplines in selecting and presenting subject material and apply teaching methods and students' progress assessment.

By the end of the course, students will possess:

- teaching process technologies.

2. Course Lecturer, Contact Information

	<p>Olga Yu. Shubkina, Ph.D. in Pedagogy, Associate Professor, Academic Manager of CDIO Metallurgy Programme, School of Non-Ferrous Metals and Materials Science, Siberian Federal University. (room 309) 95, Krasnoyarsky rabochy Av. Krasnoyarsk, Russia e-mail: oshubkina@sfu-kras.ru Google Scholar page: https://scholar.google.ru/citations?user=6XovK-UAAAAI Additional information is available at:: http://research.sfu-kras.ru/publications/author/680919 Tel.: +7 902 942 39 89</p>
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3. Prerequisites

Each part of the course includes a short introduction of methods that are required for its study. Therefore, a student without the denoted experience must be encouraged to make some additional efforts in education.

4. Course Outline

Week	Lectures	Seminars/ Assignments	Hours Lec/CA/HA
Semester 3			
1-4	<p>Trends in the world educational environment</p> <p>“The Innovation Imperatives in education”</p> <p>”Modern educational paradigms”</p>	<p>Group discussions about the contemporary problems of modern education based on publication reviews</p> <p>Critical review and reflection on contemporary problems of higher education (Conference paper review Education in the 21st Century: Meeting the Challenges of a Changing World)</p> <p>Peer reviewing</p> <p>Mind maps</p>	4/4/8
5-8	<p>Higher education pedagogy: basic concepts</p> <p>“Higher education didactics”</p> <p>“Excellence in teaching”</p>	<p>Lesson analysis on implementation of teaching principles</p> <p>Critical review and reflection on the pedagogical principles</p>	4/4/18

		and regularities of the Higher Education Case studies SWOT analysis	
9-12	Objectives and content of higher professional education “Educational systems, structures and content”	Project TUNING (Tuning educational structures in Europe) – critical review and reflection Comparative analysis of the requirements of professional standards Group discussions about the curriculum models for the 21st Century	2/4/18
13-18	Teaching technologies, methods and forms of the educational process at university “Teaching methods and pedagogical tools” “Moving from dependence to independence: application of e-learning in higher education” “Evaluating knowledge, skills and understanding”	Draft of an interactive lecture with the elements of JIT Teaching Draft of a lesson plan with the elements of gamification Draft of a lesson plan with the elements of e-learning Draft of a lesson using the ideas of integrated and active learning technologies Review and analysis of	6/8/28

		MOOCs Lesson Analysis	
	Credit		

4.1 Course requirements

4.1.1 Web-page of the course

Course materials and required reading materials are available on the course webpage “Pedagogy and Psychology in Higher Education”. The webpage is available through the SibFU E-learning portal www.e.sfu-kras.ru. You must be logged in to access this course <https://e.sfu-kras.ru/course/view.php?id=27859>

4.1.2 Required reading

At the first stage, when studying ***The Trends and Innovation Imperatives in Education*** the main source of information will be the contemporary scientific reports and conference overviews, such as Learning to Leapfrog: Innovative Pedagogies to Transform Education; Education in the 21st Century: Meeting the Challenges of a Changing World.

At the next stage, we will study ***Higher Education Pedagogy: Basic Concepts*** and the main books here will be Didactics of Smart Pedagogy by Linda Daniela; Taxonomy of Educational Objectives by Benjamin S Bloom, Powerful Pedagogy by Robyn Brandenburg.

For the third theme we need to study **the World Declaration on Higher Education for the Twenty-first Century: Vision and Action** as well as different professional standards and educational projects (**Tuning project**). The Course Book for this stage will be Curriculum Models for the 21st century by Maree Gosper and Dirk Ifenthaler.

There are also some books for this course which are Practical Guides that provide students with all the information they need to master methods and tools for conceiving and designing their own project of a lesson or lecture using the ideas of integrated and active learning technologies. These books are recommended for studying the fourth theme: Teaching technologies, methods and forms of the educational process at university – Teaching and Learning STEM by Richard M. Felder and Rebecca Brent; Just-in-Time Teaching by Scott Simkins and Mark H. Maier; Learning, Teaching and Assessing in Higher Education: Developing Reflective Practice by Anne Campbell and Lin Norton; Gamification in Learning and Education by Sangkyun Kim, Kibong Song, Barbara Lockee and John Burton; Game On! Gamification, Gameful Design, and the Rise of the Gamer Educator by Kevin Bell.

4.1.3 Course materials

The recommended books and reviews that will guide a postgraduate through the course contain all of topics of this course according to the schedule. They will provide you with useful links at the end of each chapter that will help students to improve their understanding of the topics. Also, the reflection activities on the topics in the e-course will help to understand the discipline.

4.1.4 Required feedbacks

Students are free to contact the lecturer by email. The name of department and a number of a group should be written in the subject or in the beginning of the letter for convenience. More information on how to contact the lecturer can be found in «Lecturer information» section of this Guide.

Students' Home or Class Assignment reports must be attached as a separate pdf file. The name and group number should be written on the first page of the file. Students send this report in electronic form only before the deadline.

If necessary, the lecturer will schedule a video-conference, upon request.

4.2 Course Structure

Learning Activities	Hours
Lectures	16
Practice sessions / Seminars	20
Self-study Assignments	72
Total study hours	108
Credit	

4.3 Time schedule of the course and course outline

Nº	Theme	Week	Learning Activities	Hours	Home Assignment and Reading
<i>Semester 1</i>					
1	Trends in the world educational environment	1-4	Lecture 1 “The Innovation Imperatives in education”	2	Conference paper review Education in the 21st Century: Meeting the Challenges of a Changing World A report “Learning to Leapfrog: Innovative Pedagogies to Transform Education The Innovation Imperatives”: Meet Global Goals, Cope with Change, Redress Inequalities p.11,

					<p>Scaling Deep Change is Required to Transform Teaching and Learning p.52</p> <p>Reading and reflection activities on the topic in the e-course focused on themed publications, podcasts and videos</p>
			<p>Lecture 2</p> <p>"Modern educational paradigms"</p>	2	<p>Course Book "Powerful Pedagogy": Chapter 3 Away from a Traditional Paradigm p.25-26</p> <p>Reading and reflection activities on the topic in the e-course focused on themed publications, podcasts and videos</p>
			<p>Class assignment 1</p>	4	<p>Group discussions on the contemporary problems of modern education based on publication reviews</p>
			<p>Home assignment 1</p>	8	<p>Critical review and reflection on contemporary problems of higher education</p>

					(Conference paper review Education in the 21st Century: Meeting the Challenges of a Changing World) Mind maps Peer reviewing
2	Higher education pedagogy: basic concepts	5-8	Lecture 3 “Higher education didactics”	2	Course Book: “Didactics of Smart Pedagogy”: Chapter 2 The role of pedagogy in education p.5-11 Bloom’s Taxonomy https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/ Reading and reflection activities on the topic in the e-course focused on themed publications, podcasts and videos
			Lecture 4 “Excellence in teaching”	2	Course Book: “Learning, Teaching and Assessing in Higher Education: Developing Reflective Practice”: Chapter5 Action learning and research and inquiry

					<p>methods on postgraduate courses for professional practitioners</p> <p>Practical Guide " Teaching and Learning STEM": Part 2 Teaching Courses</p>
			Class assignment 2	4	<p>Analysis of one lesson of any educator on the implementation of teaching principles</p> <p>Case studies</p> <p>SWOT analysis</p>
			Home assignment 2	18	<p>Critical review and reflection on the pedagogical principles and regularities of the Higher Education</p>
3	Objectives and content of higher professional education	9-12	Lecture 5 "Educational systems, structures and content"	2	<p>World Declaration on Higher Education for the Twenty-first Century: Vision and Action</p> <p>Project TUNING http://www.unideusto.org/tuningeu/ </p> <p>Reading and reflection activities on the topic in the e-course focused on</p>

					themed publications, podcasts and videos
			Class assignment 3	4	Group discussions about the curriculum design Course Book “Curriculum Models for the 21 st Century”: Chapter 1
			Home assignment 3	18	Read about Project TUNING and make a critical review and reflection about the implementation of Tuning methodology in educational practices of different countries Peer reviewing
4	Teaching technologies, methods and forms of the educational process at university	13-18	Lecture 6 “Teaching methods and pedagogical tools”	2	Course Book: “Learning, Teaching and Assessing in Higher Education”: Chapter 2 Chapter 2 Learning about learning or learning to learn (L2L), Chapter 3 Supporting

					<p>students' critical reflection-on-practice, Chapter 4 Problem-based learning in higher education</p> <p>Course Book "Gamification in Learning and Education"</p> <p>Course Book "Game On! Gamification, Gameful Design, and the Rise of the Gamer Educator"</p> <p>Reading and reflection activities on the topic in the e-course focused on themed publications, podcasts and videos</p>
			<p>Lecture 7</p> <p>"Moving from dependence to independence: application of e-learning in higher education"</p>	2	<p>Open University Innovation Report "Exploring new forms of teaching, learning and assessment, to guide educators and policy makers"</p> <p>Course Book "Curriculum Models for the 21st</p>

					<p>Century”: Chapter 2 Breaking Away from Text, Time and Place p.17-53</p> <p>Reading and reflection activities on the topic in the e-course focused on themed publications, podcasts and videos</p>
			<p>Lecture 8 “Evaluating knowledge, skills and understanding”</p>	2	<p>Course Book “Learning, Teaching and Assessing in Higher Education: Developing Reflective Practice”: Chapter 9 Using assessment to promote quality learning in higher education, Chapter 10 Formative assessment of the practice-based element of degree work</p> <p>Course Book “Teaching and learning STEM”: Part 2 section 8 Evaluating knowledge, skills and understanding</p> <p>Reading and reflection activities on the topic in</p>

					the e-course focused on themed publications, podcasts and videos
			Class assignment 4	2	Read Part 1 Just-in-Time Teaching in Combination With Other Pedagogical Innovations p.63-79 in Course Book “Just-in-Time Teaching” and prepare a draft of an interactive lecture with the elements of JIT Teaching Peer reviewing
			Class assignment 5	4	Read Chapter 6 Active Learning in a Practical Guide: Teaching and Learning STEM and prepare a draft of a lesson plan with the elements of active learning and gamification Peer reviewing
			Class assignment 6	2	Read Chapter 7 Teaching with technology in a Practical Guide: Teaching and Learning STEM and prepare a draft of a lesson

					plan with the elements of e-learning
					Peer reviewing
			Home assignment 4	10	Critical review and analysis of MOOCs
			Home assignment 5	18	Practical Guide " Teaching and Learning STEM": Part 1 Designing Courses, Part 2 Teaching Courses Prepare a presentation of a final project
5	Credit				Presentation of a project of a lesson using the ideas of integrated and active learning technologies

5. Assessment

Assessment strategy	Points, max	Evaluation criteria
Reading lecture materials and doing reflection activities in the e-course focused on themed publications, podcasts and videos	10	Assignments
Drafts of a lesson plan with the elements of active learning and gamification; e-learning; interactive lecture (Class assignments 4, 5, 6) Writing peer reviews (Class	30	Lesson plans Peer reviews SWOT analysis Cases

assignments 4, 5, 6) Making SWOT analysis (Class assignments 2) Case studies (Class assignments 2)		
Writing critical reviews and reflection activities (Home assignments 1, 2, 3) Creating mind maps (Home assignment 1)	30	Reviews Mind maps
Credit		
Reflection activity on the questions that require knowledge of the concepts explained	10	Essay Discussion
Presenting the project of a lesson using the ideas of integrated and active learning technologies	20	Report on the project, Project presentation

Grade policy for final assessment is:

A (excellent work) 91–100 points

B (above average work) 81–90 points

C (average work) 71–80 points

D (below average work) 61–70 points

F (failed work) < 60 points

The credit is received when students get A, B or C for the work done.

6. Attendance Policy

Students are expected to attend classes regularly. In case of missing seminars a postgraduate should perform additional work submitted to the instructor within a week after a class was missed.

Every topic involves an assignment. A written report on the assignment should be submitted within two weeks from the moment students received a list of problems. The final mark will rely on the same grading policy as for the final exam.

7. Required Course Participation

There are no special requirements for the course participation. The preferred type of report submission is the electronic one. Students can use the web-version of the course (link) for a better progress. All problems for solution could be found there together with text from the course books and materials.

8. Facilities, Equipment and Software

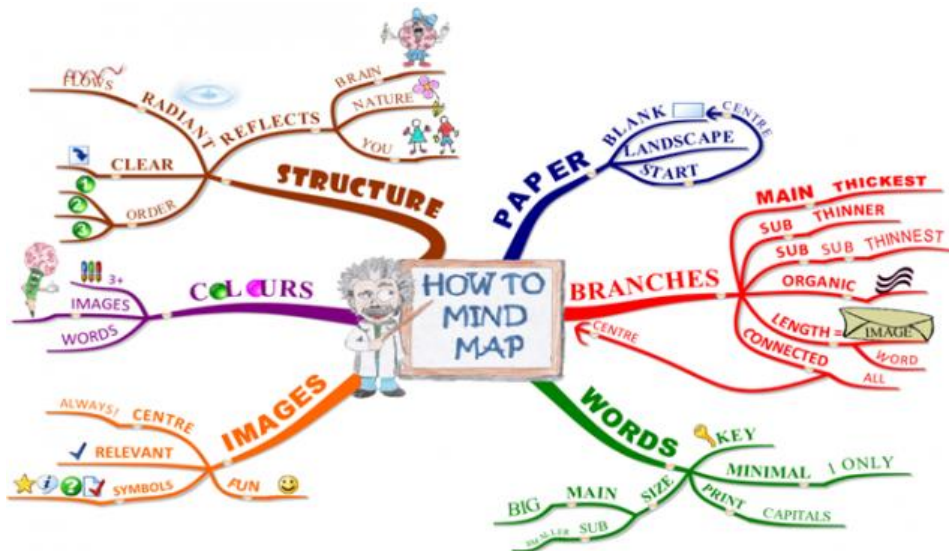
Software:

Microsoft Office 2007 or later (or similar), including:

text editor Word; Excel editor; Power Point presentation editor; Adobe Reader 9 or later (or equivalent) pdf viewer; Media Player Classic (or similar) with preinstalled media codecs; Program for working with rar and zip archives 7-Zip (or similar).

Annex 1 Example of Self-Study Assignment

Use the template to create a mind map of the concept of “education” using the course materials on theme 1.



Write an essay about innovation imperatives, trends and challenges in higher education. Create a cloud of the keywords of your essay by using word cloud generator (for example: <https://www.wordclouds.com/>)



Annex 1 Example of Class Assignment

Use the template to make a personal SWOT analysis for teaching

My strengths	My weaknesses
My opportunities	My threats



While these are all important considerations, the most important factor(s) is because

Annex 3 Example of Final Oral Exam Task

Task №1

Reflection activity (essay/critical report/discussion) on any of the questions that requires knowledge of the concepts explained:

1. Suggest and justify new pedagogical methods and educational technologies that contribute to improving the quality of education (using the example of one of the disciplines of your field of study).
2. Describe and compare possible forms and methods of guiding, monitoring and evaluating students (using the example of one of the disciplines of your field of study).
3. Distinguish assessment methods of e-learning and problem-based learning technologies (using the example of one of the disciplines of your field of study).
4. Explain and exemplify how can the professional skills be developed.
5. Compare and contrast the educational paradigms.

Task 2

Present a project of a lesson/lecture using the ideas of integrated and active learning technologies.