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PECULIARITIES OF “INTEGRATED DESIGN” MASTER’S DEGREE PROGRAM AT COLOGNE UNIVERSITY OF APPLIED SCIENCES

ABSTRACT

The paper is aimed at studying “Integrated Design” Master’s degree program at Köln International School of Design (KISD) that is a part of Cologne University of Applied Sciences. The program offers project- and student-oriented study in inspiring and contextualized environment that is suitable for implementing problem-solving practices and techniques and provides students with high level of flexibility and independence. The key component of the program is the completion of the thesis within one of the thematic sections: Urban Intensity and Resources, Material Systems and Laboratory Culture, Social and Public Innovations, and Visual Culture and Politics. Curriculum of the program has been thoroughly studied and it has been defined that the duration of the program is 3 semesters. During the first semester, students develop their vision and explore issues related to the thematic section that they have chosen for thesis writing and have 3 types of courses: 1) KISD short-termed, medium-termed and long-termed projects and scientific seminars; 2) courses with master-classes (MethodLab, Design Approaches, Mentoring); 3) courses with students of the same thematic section. During the second semester, they start their designing process and apply observation, exploration, experimentation and practical designer work to deal with their thesis. The third semester is dedicated to in-depth work on the thesis and its presentation. It has been determined that the curriculum of the “Integrated Design” program presupposes 90 ECTS credits for the whole study with 30 credits for each semester. Each semester includes compulsory modules the completion of which is verified by module examinations. Curriculum provides information on the quantity of credits attributed to each module, to Master’s thesis and final exam which is actually the defense of the thesis. The procedure of assessing the exam has been described and the calculation of the final exam cumulative grade has been outlined. Students complete Master’s degree program if they obtain 90 ECTS credits. The requirements for their obtaining have been characterized in the paper.

Keywords: *Integrated Design, design, Master’s degree, curriculum, module, Germany, Master’s thesis, Cologne University of Applied Sciences, Köln International School of Design.*

АНОТАЦІЯ

У статті досліджено особливості розробки та реалізації магістерської програми «Інтегрований дизайн» у міжнародній школі дизайну (KISD) при Кельнському університеті прикладних наук. Програма забезпечує проєктно- та студентоцентроване навчання у сприятливому та контекстуалізованому середовищі, спрямованому на впровадження різних форм та методів дизайну, а також прийомів вирішення поставлених завдань, що надає студентам високий рівень гнучкості та



незалежності. Ключовим компонентом програми є виконання дипломної роботи, тематика якої може стосуватися одного з чотирьох основних тематичних блоків: «Матеріальні системи та лабораторна культура», «Інтенсивність та ресурси міста», «Соціальні та суспільні інновації» та «Візуальна культура й політика». У процесі дослідження ретельно вивчено навчальний план освітньої магістерської програми. Визначено, що тривалість програми становить 3 семестри. У першому семестрі студенти розвивають своє дизайнерське бачення та досліджують питання, що стосуються тематики написання дипломної роботи, а також вивчають 3 типи курсів: 1) короткострокові, середньострокові та довгострокові проекти та наукові семінари KISD; 2) курси з майстер-класами («MethodLab», «Дизайнерські підходи» та «Наставництво»); 3) спільні курси зі студентами, які пишуть магістерську роботу з того ж самого тематичного блоку. У другому семестрі студенти розпочинають процес проектування та застосовують спостереження, дослідження, експерименти та практичну роботу дизайнера для вирішення завдань своєї дипломної роботи. Третій семестр присвячений поглибленій роботі над дипломним проектом та його презентацією. Визначено, що навчальний план програми «Інтегрований дизайн» передбачає 90 кредитів ECTS (30 кредитів за кожен семестр). Семестр включає обов'язкові модулі, завершення яких перевіряється модульними іспитами. Навчальний план містить інформацію про кількість кредитів, наданих за кожен модуль, за магістерську роботу та випускний іспит, який є одночасно захистом дипломної роботи. Описано процедуру оцінювання випускного іспиту та розрахунок сукупної оцінки за іспит. З'ясовано, що студенти закінчують магістерську програму, якщо вони отримують 90 кредитів ECTS. Вимоги до зарахування кредитів охарактеризовані у статті.

Ключові слова: Інтегрований дизайн, дизайн, ступінь магістра, навчальний план, модуль, Німеччина, магістерська робота, Кельнський університет прикладних наук, Кельнська міжнародна школа дизайну.

INTRODUCTION

In contemporary fast changing reality, design is an integral part of every aspect of material and virtual world. It is through design that goods and services in social, political, economic and cultural contexts are presented and perceived. Design is a way of interfering into all the processes that take place in these contexts, but at the same time, it is a way of producing, acquiring, communicating and documenting the knowledge that can be gained in all these aspects of life. In modern technological and ever-changing realities, these features of design are especially attractive to young generation that is on the edge of choosing the direction of their vocational training and future profession. In Europe, "Design" specialty is gaining popularity and it is considered to be one of the most prestigious study programs in many higher educational establishments of Germany, France, Sweden, the Netherlands, Italy, Spain and other countries.

THE AIM OF THE STUDY

The aim of the paper is to analyze specific features of "Integrated Design" Master's degree program at Köln International School of Design in order to outline aspects of positive experience that can be borrowed by developing countries for implementing similar study programs aimed at future designers' vocational training.

THEORETICAL FRAMEWORK AND RESEARCH METHODS

Theoretical and practical issues concerning design, its role in modern world, different aspects of its application have been an interest to many scholars and scientists and



are presented in works of R. Deutch (2011), who studied design strategies for architectural practice; C. Eastman (2001), who dedicated his research to cognition in design education; S. Gramlich and P. Groche (2017), whose works present issues related to manufacturing integrated design. M. Keeler (2016) studied fundamentals of integrated design for sustainable building and Ch. Koch (2013) considered integrated design process as a concept for green energy engineering. H.-L. Park (2010), S. Vajna (2020), D. Wahl (2016), and K. Wallace (2000) studied integrated design engineering in terms of interdisciplinary and holistic product development.

Nevertheless, current scientific works and literature do not provide enough information concerning professional training of future designers ready to work in contemporary ever changing professional environment. That is why our attention was drawn to the peculiarities of this process at higher educational establishments of Europe where effective and qualitative training of future specialists is successfully implemented. In the course of our research, we paid special attention to Köln International School of Design (KISD) that is a part of Cologne University of Applied Sciences, one of the largest public universities in Europe, and is well known for its Bachelor's degree program in "Integrated Design" and subsequent Master's degree program.

While doing the research we have used a range of general scientific methods (study and analysis of reference, scientific and educational resources), as well as systematization and generalization. Our research is qualitative (descriptive) and includes observation, document analysis, and narrative inquiry.

RESULTS

Master's degree program at KISD offers its students a vast range of critical, experimental and inventive researches in dynamic structure. Project- and student-oriented study in inspiring and contextualized environment is suitable for implementing problem-solving practices and techniques and provides students with high level of flexibility and independence. Graduates of the "Integrated Design" Master's degree program take on different roles and positions in spheres directly or indirectly related to design all over the world. They become directors of design studios, art directors, project managers, publishing editors, researchers, public relation specialists, lecturers, museum assistants, marketing managers, entrepreneurs, etc.

KISD is aimed at breaking traditional limits of designing through combination of diverse approaches, perspectives and practices used to solve issues and problems which are impossible to be solved within a single branch of designing knowledge and skills. The program encourages students to learn how design can influence the issues of modern culture, media, ecology, politics, and urban studies. The main component of the program is the completion of the thesis within one of the following thematic sections: "Urban Intensity and Resources", "Material Systems and Laboratory Culture", "Social and Public Innovations", and "Visual Culture and Politics". Pursuing their own research interests, students are involved in different branches of science, extend and develop their competence and concentrate on their research (Köln International School of Design: KISD, 2021). Students are welcomed to cooperate, explore and implement within the defined thematic sections, which provide environment for in-depth research and are aimed at extending, transforming and reconsidering the limits of design, theory and practice, as well as interdisciplinary methodologies. Master's degree students have a unique opportunity to immerse into integrated, intercultural and interdisciplinary atmosphere and be a part of research and practice-based designing processes.



A person willing to study the program must have a Bachelor's degree in Design or related science that presupposes 3.5 academic years (210 ECTS credits) and/or work experience in design branch. The language of studying is English and applicants must provide a certificate of the language knowledge (TOEFL, IELTS etc.). The program starts in summer semester and lasts for 3 semesters, includes 90 ECTS credits and requires an aptitude test.

Master's degree in "Integrated Design" gives students a great opportunity to get the experience of international studying and carry out transcultural research within the theme of their diploma paper. Students can take advantage of Erasmus or Double Degree exchange student programs in affiliated universities. Double Degree is a three-semester course of studying. In terms of this program, students can apply to Tongji University in Shanghai (China) and Chiba University in Japan. Students who study on Double Degree Program leave KISD after two semesters to study two other semesters in the accepting university. Thus, they prolong their course of study for 1 more semester. After completion of the thesis and its presentation in the accepting university, students of KISD come back to Cologne to take their final exam.

Besides, if students want to study one semester abroad, they can apply to one of the partner-universities if it is consistent with their individual plan of studying and Master's thesis. However, it will prolong their studying at KISD for the time spent abroad. Such students come back to Cologne and complete their master's degree paper during one semester.

At KISD, master's degree students work on their thesis throughout the course of study. During the first semester, they develop their vision and explore issues related to the thematic section they have chosen (Material Systems and Laboratory Culture, Urban Intensity and Resources, Social and Public Innovations, and Visual Culture and Politics).

During the second semester, they start their designing process and apply observation, exploration, experimentation and practical designer work to deal with their thesis.

The third semester is dedicated to in-depth work on the thesis and its presentation.

The first semester comprises 3 types of courses:

1. KISD projects and seminars: short-termed projects (2 weeks); medium-termed projects (6 months); long-termed projects (during the whole course of study) as well as scientific seminars (during the whole course of study). Practically all the projects and seminars refer to one or two thematic sections for thesis writing. All the information about courses and projects offered for each semester as well as the information about thematic section of the projects can be found in the catalogue of KISD courses.

2. Courses with master-classes:

– "MethodLab" which consists of 3-4 block seminars distributed throughout the semester;

– "Design Approaches" is a kind of introduction to KISD and takes place during first two weeks of the semester. Students get acquainted with the head of the study program, thematic sections, seminars, laboratories and everything they need to know to study at KISD;

– Mentoring: every semester is accompanied with a mentoring program that is closely related to educational process. During the first semester, mentoring program covers issues of feedback between students and mentors and their determination about Master's



degree thesis. Students start creating their own register in KISD space where they reflect their experience, share ideas etc.

3. Courses with students of the same thematic section. For each thematic section there are organized progress colloquiums where students meet KISD professors and students of the same thematic section to discuss some common vision of design perspectives in their branch of research, give feedback to other students, discuss section-related content and follow one's progress in the work on thesis (Köln International School of Design: KISD, 2021).

Selection of courses and the registration on the chosen courses can be performed online on a special KISD online platform where students can find a detailed description of registration process and course selection. Students are to register for scientific seminars and projects only. They do not need to register for master-specific courses as it is done automatically.

Extracurricular activities at KISD include Culture Lectures that are delivered every Wednesday evening by different KISD professors. Besides, there are so-called KISDTalks dedicated to design history and design research, design theory, including historical development of design, its social, cultural and economic aspects and their impact on design. They are diverse in terms of themes and speakers. International experts in different branches of science and designers are regularly invited there to be speakers (Hochschule Anhalt, 2021).

Curriculum of "Integrated Design" Program is presented in Table 1:

Table 1

Curriculum of the "Integrated Design" Master's degree program

Semester 1 (summer term) 30 ECTS credits		Semester 2 (winter term) 30 ECTS credits		Semester 3 (summer term) 30 ECTS credits	
"Integrated" modules:	25 ECTS credits:	"Interdisciplinary" modules:	25 ECTS credits:	"Elaborated" modules	25 ECTS credits:
Integrated Design Studio	9	Interdisciplinary Exploration	7	Individual Thesis Work	20
Prototyping and Modelling Studio	7	Individual Project/ Thesis Brief	9	Presentation	3
Emerging Design Issues	3	Teaching Assistance	5	Thesis Defence	2
Professional Opportunities	6	Professional Opportunities 2	4		
"Relate and Reflect 1" modules:	5 ECTS credits:	"Relate and Reflect 2" modules:	5 ECTS credits:	"Relate and Reflect 3" modules:	5 ECTS credits:
Social Class Project	2	Mentoring 2	2	Mentoring 3	2
Mentoring 1	2	Progress Colloquium 2	3	Progress Colloquium 3	3
Progress Colloquium 1	1				

All the compulsory modules enlisted in the curriculum must be completed and verified by means of module exams. All the module examinations are listed in the module catalogue as well as the information concerning the selection of modules and courses. Curriculum and exams are organized in such a way that all the exams are to be held till the end of the last semester in accordance with standard duration of the study program. Students can take exams in more modules than it is required for the obtaining of the



necessary quantity of modules. The results of these optional modules can be presented in the certificate if the student wishes so. However, they are not taken into account while calculating the final cumulative grade.

Similar to Bachelor's program, Master's degree program is divided into 2 separate courses of study – "Interdisciplinary Studies in Design" and "European Studies in Design". Their module exams differ slightly (TH Köln (University of Applied Sciences), 2021).

Students following "Interdisciplinary Studies in Design" must take the following module exams:

Module exam	Percentage of the final cumulative grade (%)	ECTS credits
"Integrated"	15	22
"Interdisciplinary"	20	25
"Relate and Reflect 1"	5	5
"Relate and Reflect 2"	5	5
"Relate and Reflect 3"	5	5

Students following "European Studies in Design" must take the following module exams:

Module exam	Percentage of the final cumulative grade (%)	ECTS credits
"International"	15	25
"Interdisciplinary"	20	25
"Relate and Reflect 1"	5	5
"Relate and Reflect 2"	5	5
"Relate and Reflect 3"	5	5

For "International" module exam students obtain credits during their first semester in the partner-university on the basis of different courses offered there. Partner-universities have to verify the quantity of the obtained credits. The head of the exam board makes a decision concerning the recognition of the module exams taken at partner-universities abroad.

Credits are assigned to each component of the master's degree program according to European Credit Transfer System. Credits are a quantitative indicator of the workload necessary to complete a component of the program successfully. This workload includes courses, preparation to them and further work, self-didactic research, exams and preparation to exams. Workload that is necessary for successful completion of the Master's program is 60 ECTS credits for an academic year (full-time study). Students get credits only if they successfully complete the module. It means that students obtain the general quantity of credits for each module if they pass it at least with the grade "sufficient" irrespective of the grade for the exam. For successful completion of Master's program students need to obtain 60 ECTS credits in general. Curriculum provides information on the quantity of credits assigned to each module, to Master's thesis and the final exam. More detailed information is presented in module catalogue (TH Köln (University of Applied Sciences), 2021).

Module content can be studied within one course or different courses with different teaching methods. Each module exam can be divided into some separate exams but, in any case, the aim of the exam(s) is to determine whether students have knowledge of



the main topics, if they possess necessary competencies and if they are able to apply obtained knowledge and skills independently. Requirements to module exams must correspond to learning outcomes defined specially for each module and presented in module catalogue. During the exam, students' knowledge of the previous modules content can be tested.

There are different types of module knowledge testing but the dominant form is exams which can be written (and last from 1 to 3 hours), oral (last for 10-30 minutes for each student) or conducted in other forms or their combination. The type of the exam is determined for each module by examination board at the beginning of each semester with consideration of module structure and after consultation with appropriate experts. If the testing of students' knowledge includes several components, examination board has to decide how to assess these components. They may use special system of assessment with different indicators; otherwise, the final grade is calculated as the arithmetic mean of individual grades. As a rule, the examination board announces exam schedule one month before the examinations (Examination regulations for the Master's program in Integrated Design with the study courses "Interdisciplinary Studies in Design" and "European Studies in Design", 2021).

Master's thesis has to be submitted as a written project work. The student has to prove that he/she can independently fulfill tasks related to his/her branch of science during a definite period of time presenting specific features of the subject of the thesis in interdisciplinary contexts with the help of scientific and subject-related methods.

Thematic sections for Master's thesis are quite diverse in their content:

1. **Material Systems and Laboratory Culture.** This section is related to problems caused by anthropogenic climate changes and the excessive use of natural resources, which produce harmful effect on ecosystems all over the world. It considers the need of changes in terms of renewable materials and resources, their distribution, sustainable way of thinking (instead of short-term income) and refusal from orientation onto a human in favor of diverse and inclusive perspectives, critical reflection of life cycles of products, systems and services (Eastman et al., 2001). Working with organic and non-organic substances, such as seaweeds, algae, fungi, fibers and particles, as well as with digital technologies, executive mechanisms, LEDs, engines, sensors, open platforms and participatory processes, design can explore new textiles, sensitive structures, material behavior, interactive objects and tangible networks. The aim is to activate systemic changes (Groche et al., 2017).

2. **Social and public innovations.** In public and social sectors, the pressure related to innovations is constantly increasing. New technologies completely change traditional methods of work. Expectations and requirements for social and public services are increasing while public resources and budget are decreasing. Besides, new expectations of young people concerning their future work and workplace lead to a considerable pressure onto public and social services (Wallace & Blessing, 2000). In this section, students analyze the role of design in these processes and consider how constant innovations and transformations can be organized, created and established with the help of design. In close cooperation with other scientific branches, for instance social sciences, information technologies, media studies or ethics students experiment and present projects concerning common creation and advancement of technology-oriented transformations, development of active participation model, testing and modeling new work cultures and methods of work that presuppose application of design (Keeler et al., 2016).



3. Urban intensity and resources. Cities concentrate more and more power, capital and knowledge as well as people, data, goods and finance. Because of this, many cities cannot solve problems related to supplies, social inclusion, economic integration and infrastructure. At the same time bodies, things, environments and technologies quickly become more interrelated. These interconnections open new opportunities – cultural, ecological, social, and economic – for alternative future of big cities. The main focus of this section is to explore these opportunities. With the help of spatial and urban analysis, concepts of development, project scenarios, speculative interventions and experimental prototypes students look for answers of how to live in the future and how to design urban space, infrastructure and buildings to live there the way they see it (Koch, & Buhl, 2013; Park & Lee, 2010). Should we perceive cities as physical and virtual resource available for everyone? How do people interact and cooperate with their urban environment? What are the complicated and heterogeneous systems for their activities? What social, political and technological achievements and consequences emerge in the result of acceleration and tightening of urban space and time structures? How can design be involved in these processes?

4. Visual Cultures and Politics. Modern everyday culture and media culture perceive visualizations in unique cultural way. Images and methods of imagining often determine identity, recognition and transformation in society. Media and visual images form economic, political and social discourses evoke some mood, thoughts and even world views. They usually appear together with auditory, verbal or tactile phenomena that allow them to develop in a different way. As digital and media processes gradually cover all aspects of everyday life, critical reflection of design, application of images by users and their influence on them is becoming more and more important (Wahl, 2016). What impact can visual design have on modern society? How can it be used to communicate? What are the possibilities and limits of visual argumentation and how can visual processes draw attention to certain issues? These and similar questions are considered through material-practical and reflexive designing processes. The scope of possible perspectives includes formal and informal forms of communities, cooperation and co-existence; communication, cooperation and participation in digital communities and social media; processing and presentation of data in informational design; social, political and cultural consequences of digitalization; forms of communication in economic and political advertisement; design as fiction; methods and forms of branding and identity; new forms of cultural and esthetic representation in post-digital era (Deutsch, 2011; Vajna, 2020).

To carry out qualitative research within these thematic sections, students must take part in interdisciplinary collaboration.

In terms of our research, it is also important to mention some regulations concerning Master's thesis writing, presentation and assessment. The theme of the thesis can be elaborated by any professor that was appointed as examiner. This professor can also function as advisor of the thesis. Students can refuse from the theme of the thesis only once and if so, must do it during first two weeks of its announcement without explaining the reason. Thesis can be completed in some institution beyond the university if it can provide appropriate help and consulting. Students can give their own suggestions as to the theme of the thesis. Master's thesis can also be written as a part of some common team project if the contribution of the student can be easily tracked and assessed. Students have 14 weeks to complete the thesis. However, if students wish so, the term for thesis completion can be reduced and the final exam can be held earlier than planned (Examination regulations for



the Master's program in Integrated Design with the study courses "Interdisciplinary Studies in Design" and "European Studies in Design", 2021).

Master's thesis is assessed by three examiners. Two of them are supervisors of the thesis and one professor is appointed by the board. If the grades of these examiners are different, the grade for the thesis is calculated as an arithmetical mean. However, the grade "sufficient" or "good" are given only if at least two grades are "sufficient" or "good".

The student has to make the presentation of the thesis no later than one week after its submission. The presentation is in open access to all students and university members. The format of the presentation can be chosen by the student. It is assessed as a partial grade that is taken into account during the defense of the thesis as 20 % of the final grade. It should be stressed that examiners' decision concerning student's passing the defense is based on the presentation.

Students obtain 23 ECTS credits for completion of the Master's thesis and its presentation and 2 more credits for final oral exam that complements the thesis. However, it is assessed as a separate exam that must be held during 2 weeks after the submission of the master's thesis. Its main aim is to define whether the student is capable of oral presentation and independent substantiation of the results and conclusions of the thesis, its scientific and methodological foundations, interdisciplinary and multicultural contexts and importance of the thesis for practice and real life. Students can be allowed to take the final oral exam under the following conditions: 1) they have passed all the module exams; 2) they obtained at least "sufficient" grade for the thesis including the presentation.

Examination Board has to inform the students about dates of their final oral exam (defense of their thesis). The duration of the exam is usually 30 minutes per student. If a student fails the exam, he/she has right to take it again. Students who pass master's thesis including the presentation and final exam (defense) obtain 25 ECTS credits. Master's thesis and final exam are assessed with a final cumulative grade. Master's thesis and presentation account for 80 % of the grade and the final oral exam – for 20 % (Examination regulations for the Master's program in Integrated Design with the study courses "Interdisciplinary Studies in Design" and "European Studies in Design", 2021).

Students pass master's exam if they obtain 90 ECTS credits. It requires that students passed all the necessary module exams and obtained at least "sufficient" grade for the thesis and final oral exam. The student doesn't pass the master's exam if at least one of the exams is assessed as "insufficient" or recognized as "insufficient". In this case, the student must be notified about his/her failure. The student then is excluded from the list of students and the head of the examination board is to give them an official document with a list of passed exams and their grades and exams that were not passed.

In case students pass everything, they receive a certificate about passed master's exam during 4 weeks after the final exam. This certificate contains all grades and credits for all module exams, theme of the thesis, grades and credits for the thesis and final oral exam, final cumulative grade for master's exam and transferred or recognized grades from other universities. Final cumulative grade for the master's exam is partially weighed as a grade for module exams and partially for final oral exam (defense). As it was mentioned before, grades for optional courses are not taken into account while calculating final cumulative grade for the master's exam. Students are given diploma with certificate about passing the Master's exam and its date. The diploma verifies the acquiring of the master's degree.



CONCLUSIONS

In the result of the conducted research, we came to the following conclusions:

- “Integrated Design” program is a project- and student-oriented study in inspiring and specialized environment that is suitable for implementing problem-solving practices and techniques and provides students with high level of flexibility and independence.

- The main component of the program is the completion of the thesis within one of the thematic sections: Material Systems and Laboratory Culture, Urban Intensity and Resources, Social and Public Innovations, and Visual Culture and Politics.

- The duration of the program is 3 semesters. During the first semester, students develop their vision and explore issues within the thematic section for the thesis writing and have 3 types of courses (KISD short-termed, medium-termed and long-termed projects and seminars; courses with master-classes (MethodLab, Design Approaches, Mentoring); and courses with students of the same thematic section). During the second semester, they start their designing process and apply observation, exploration, experimentation and practical designer work to handle their thesis. The third semester is dedicated to in-depth work on the thesis and its presentation.

- Curriculum of the Integrated Design program presupposes 90 ECTS credits for the whole study with 30 credits for each semester. The semester includes compulsory modules, the completion of which is verified by module examinations. Curriculum provides information on the quantity of credits assigned to each module, to Master’s thesis and final exam, which is the defense of the thesis. The grade for the final exam is calculated as a cumulative grade.

- Students complete Master’s degree program if they obtain 90 ECTS credits.

In our further research, we have an intention to study student exchange programs in affiliated universities of KISD, such as Erasmus or Double Degree. Of special interest is the study of students at Tongji University in Shanghai (China) and Chiba University in Japan. It will allow to outline specific features of “Design” Master’s degree program in Asian countries.

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