A FRAMEWORK FOR DRAPING COURSE BASED ON PARTICIPANT
OBSERVATION IN FASHION DESIGN EDUCATIONMODA TASARIMI EĞİTİMİNDE KATILIMLI GÖZLEME DAYALI
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Özet: Çalışmanın amacı, Türkiye’deki üniversitelerde verilecek olan gerçek anlı/on-line Drapaj derslerinin uluslararası standartlarda ana çerçevesini belirlemektir. Çalışmanın ana odağı oranlı ölçek ve SWOT analizine dayalı olarak güçlü, zayıf yönler, fırsat ve tehditler bakımından Cornell Üniversitesindeki Moda Drapajı dersi uygulamalarının incelenmesidir. Veriler, 2014 yılı bahar dönemi boyunca farklı üniversitelerdekilerle karşılaştırılarak, Cornell Üniversitesi Lif Bilimi ve Hazır Giyim Tasarımı Bölümünde verilen Moda Drapajı dersinde gözlem formu yardımıyla toplanmıştır. Formdaki her bir ölçüt, sıralı dereceleme ölçeği ve SWOT analizine göre değerlendirildikten sonra sınıflanarak yorumlanmıştır. Sonuçlara dayanarak, Türkiye’deki üniversitelerde verilecek gerçek zamanlı ya da on-line Drapaj dersi için örnek bir program çerçevesi sunulmuştur. Program, temel becerileri içermesi ve esnek teknolojisi nedeniyle Türkiye için önerilse de, başka ülkelerde de rahatlıkla kullanılabilecek şekilde tasarlanmıştır.

Anahtar Kelimeler: Drapaj, Ders Programı Geliştirme, Moda Tasarımı, Moda Tasarımı Eğitimi

Abstract: The aim of this study is to define a potential framework for real time /on line draping course applications according to the international standards for universities in Turkey. The basis of the study is participant observation of a draping applications course at Cornell University, to identify SWOT. An observation form was used to document and catalogue data from the study. By comparing other university, observation was conducted for the entire course during the spring semester 2014 at Cornell University, in the Department of Fiber Science & Apparel Design. Based on the results, a sample framework for fashion draping course both real time and on line applications for higher education in Turkey was developed. Although the analysis was conducted using a framework for Turkey, the results are relevant to other countries, as they focus on core skills and flexible technologies that are universally applicable.

Key Words: Draping, Curriculum Development, Fashion Design, Fashion Design Education

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
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1. INTRODUCTION

Clothing design is a demanding process which must address both aesthetic and technical issues. Achieving both visual allure and a precise fit are essential to the creation of successful apparel products. Many famous designers thus work closely with talented patternmakers because the “pattern is invaluable to the fashion designer. It is as a plan to the architect” (Calderin, 2009:162). Patternmaking is the first, and most important step, which enables conceptual design to be realized in the fashion design product-development process. Development through the patternmaking process establishes the product’s structure, which provides functional design and manufacturability; no matter how successful the aesthetics of the clothing, if it is not wearable, it is not saleable. Therefore, patternmaking is a process of critical thinking by which science applied to design creates clothing that functions well, and can also be sold at a suitable price. For this process, knowledge and skills are learned through education, but are developed through practice. The main difference between academia and industry is that academia emphasizes knowledge and the conceptual basis of process, whereas the industry focuses on the process itself. The apparel industry’s goal is to develop more effective and talented employees by improving their knowledge and skills. Competitiveness in the fashion design industry depends on innovation driven by creativity, and on well-educated designers who exhibit high-level skills

and who can develop new designs that do not simply copy work by other designers.

The business of fashion is to create wearable products that are sold in the market, of course, not art to be displayed in an art gallery. Clothing designs are made to be worn. There are many different methods for constructing garment shapes. As discussed by Dieffenbacher (2013:14) “someone begins with sketch, another begins 2D flat pattern, whereas others (such as Donna Karan and Isabel Toledo) prefer to begin work with fabric by using 3D draping techniques”. Draping is a method of creating garment shapes by forming and pinning fabric directly on a dress form. Draping allows designers to respond quickly to create or change the model on the dress form or mannequin, because they can see how the model interacts with the body shape. The pattern pieces can then be transferred to a computer through digitization, checked on the virtual form, printed, and, then cut with the use of CAD technology. Many college-level fashion design programs therefore offer draping courses for their students. Draping is an important and compulsory course all over the college to bring students in good patternmaking skills like all around the world. But defined as Ecole Holt Couture Web site (2014) all the same designer graduated these school around, there is some evidence of not enough their technical creators.

2. PURPOSE & CONTENT

Interest in fashion schools have boomed over the past decade. A 2012 study revealed that enrolment

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
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www.mtddergisi.com

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at the New York City's top ten design schools has grown by 34 percent (Wang, 2013)". Similarly, this situation has been in Turkey too. According to Measuring, Selection and Placement Center (OSYM) in 2014 guide, the number of fashion design department was 14 in 2010 and increased to 20 in 2014 at undergraduate level. It will continue in the future. The other thing is that The Science and Technological Research Council of Turkey (TUBITAK) has been supported digital open course resources (TUBITAK-5000 Project). For these reasons, the aim of this study is to define a framework for draping course suitable for both real time and on-line at fashion design field in higher education. To achieve this aim, the main focus of the study is to learn how to teach draping and patternmaking skills by observing a draping course at Cornell University and by conducting an analysis of strengths, weaknesses, opportunities and threats. The reason of choosing the Apparel Design Department is that the Fashion Draping Course is very popular among scholars and students came from all around the world.

3. MATERIAL AND METHOD

A participant observation research method was used in this study. This method can be described as follows: "participant observation refers to a form of sociological research methodology in which the researcher takes on a role in the social situation under observation" (Macionis & Plummer, 2011). In this study, the researcher was given permission by the course instructor to observe the

CU FSAD-2640 Fashion Draping Course during the spring semester 2014 at Cornell University (Appendix A).

3.1. Approach to the Design of the Course

Framework: Every education program needs inputs, process and outputs. Inputs convert into outputs in a systematic approach through process. This study was guided by Wolf's process approach (2007), which is an approach generally preferred in the design of curriculum. The course structure was based on the model known as 21st Century Skills used in many educational fields. "The Framework for 21st Century Learning has widely become the recognized model for infusing 21st century skills into the curriculum. There are hundreds of educational agencies and organizations who have adopted the P21 Framework, either formally or informally, to guide their learning communities and are embedding 21st century skills in curriculum and professional development" (P12). Using this model, a thorough determination of goals and objectives for creative pattern-making were established using the framework of the development of competency or proficiency-based education. The business world choose this model in the late 1950's as work learning strategy (ANLC, 2012; LD, 2012; UCH, 2012; Bowden, 2012). The audiences (students) represent both inputs into and outputs from the education program. Process refers to all learning activities and assessments. For a sample course framework, SWOT Analysis was chosen. This

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
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ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

form of analysis is a structured planning method commonly used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business (Venture, 2014).

3.2. Data Collection: Data was collected using an observation form prepared by the researcher and collaboratively reviewed by the researcher and the instructor for the course, CU FSAD-2640 Fashion Draping Course. The observation period lasted over the course of the entire spring semester at Cornell University's College of Human Ecology, Department of Fiber Science & Apparel Design (CU-FSAD) in the 2014 academic year (CU CHE Web site/degree progress).

According to course numbering systems (CU CHE Web site/courses) this draping course is open to freshmen and sophomores and has prerequisites of one introductory apparel design course that teaches basic pattern-making and construction skills. While preparing the observation form, Posner's operational program type's classifications were taken into account. Posner's program types: official, operational, hidden, null, and extra curriculum (1998, 2004). The most important point is that accurate real time observation allowed assessment of the operational (actual) process instead of being limited to the review of official documents for this research. The observation form consisted of eight basic criteria and thirty eight sub-criteria (Table 1). The class, a very popular one among students (both undergraduate and graduate) and visiting scholars, consisted of

sixteen students, and three visiting scholars from foreign countries. Also, some students came into the class via an exchange program. The course (3 credits) was given in four class periods which included lectures (2 per week) and studio components (one per week for students - the class split into two groups for studio, so the instructor held two studios per week).

The criteria are examined using both Likert scales (Exceptional: 5, Somewhat Adequate: 4, Adequate: 3, Inacceptable: 2, Not at all adequate: 1) and SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats for the process). Obtained data were classified, synthesized, and summarized, and the course's strengths, weakness, opportunity and threats were identified. Then, a sample draping course framework (included in subject, goals and outcomes) was prepared based on these data. The data were also reviewed by discussing them with course instructor to assess their acceptability for scholars/educators in higher education.

4. FINDINGS

The course began with an introduction of all audience members, taking of attendance and facilitating registration for the lecture and separate studio meetings. Instructions for both classes and studio meetings are comprehensive and are conducted at an exceptional level. The information presented to the students and the pedagogical applications used for demonstration are frequently updated and supported by brand-

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

new technologies (computer aided design & manufacturing, graphical design etc.).

The professor makes special effort to facilitate student's understanding of, and access to professional high quality and affordable course materials and tools from New York City (four hours from Cornell University by bus), and suggests many supplementary materials such as books, journals, visual and online tools.

Students are encouraged and supported in creative-critical thinking, and in innovation at an exceptional level. Both formal and informal class activities and encouragement of independent thought of the students are designed to contribute to a quality education.

The course supports democratic and cooperative behaviors, fostering effective knowledge and skills, and focuses on both process and product by promoting freedom from an overly-structured curriculum. The professor gives some examples from her experience or the life and works of famous designers, and consistently projects warmth and acceptance of students. Even though the professor is very busy, she follows national and international news to stay current in her understanding of the fashion field and to engage the students in dialogues on topical issues.

The studio and demonstration materials are prepared by the professor's teaching assistant before the beginning of the lesson. Students are expected to attend all lectures and to pay

attention throughout. Instructional methods are supported via technologically-advanced systems. For example, the professor's demonstrations are recorded with cameras mounted in the ceiling, and projected, so students are watching a projection screen and can see the details of the process as it occurs. Then, after the lecture, during the studio sessions, students are able to replay documents using the Blackboard video sharing system. Studios are accessible to students whenever they want to work, as they have card access to the building and the studio equipment 24 hours a day, 7 days a week.

The professor uses the latest technologies in the pattern-making process. After teaching basic draping technique rules and skills, the Optitex Computer Aided Design Program is taught to the students in a weekend seminar to make a connection between design and technology.

The FSAD 2640 Fashion Draping course's contents, primary and secondary objectives are quite ambitious and significant.

Students come from all kind of high school and some of them do not have patternmaking background. Even if they do not have extensive prior experience, they generally have a high level of motivation and willingness. Most of them are enthusiastic for learning, applying their own creativity to projects. As in most fashion schools, the workload is intense. Students work very hard, as is typical of most fashion schools.

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

There are some extra workshops offered during the week and on weekends in order to enhance students' skills.

The Professor checks students' projects both during and outside of classes and studio sessions. Assessments of student work are offered from idea to process to the final product, and are very comprehensive. Professors also encourage students to engage in discussion and peer assessment. However, measurement tools such as check lists, questions & answers, and rubrics shared with the students are also used along with peer assessments. After every project and sometimes at internal points in the project, students are given feedback. Feedback is seen as important feature in assessment. Time management is important for both instructor and students.

Based on the final course and teaching evaluations, the mean of students assessments' was 4.6 out of 5. Almost all of the students thought the professor and her course to be successful. The assessments used a Likert scale with 5 points (from never to always, or from poor to excellent).

Some ratings of the professor sorts' mean are 5 point of students assessments'. These highly rated attributes were that the instructor 'seems enthusiastic about teaching the material', that 'lecture demonstrations are effective'; that 'instructor uses the blackboard/overhead (visual materials) in a consistent and meaningful way that helps foster understanding of ideas and concepts'; that the instructor 'emphasizes main concepts and principles rather than dwelling on the obvious'; that 'independent thinking was required'; that 'the type of examination (in this case, exercises and projects) was suitable for the purpose of course'; that 'the objectives, work requirements, and grading system were made clear'.

These results are evidence of the success of the course framework. At the end of the semester, a brief runway show was held in the hallway to exhibit student work. It was simple to organize but contributed to student excitement, pride in their work and development of professional attitudes.

The observation results in the course are summarized on the description given in Table 1:

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

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ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

Table 1: Fashion Draping Course Observation Results

CRITERIA		Level of ADEQUATE					SWOT ANALYSIS			
		5	4	3	2	1	S	W	O	T
PRELIMINARY PREPERATION	Physical Infrastructure (Lab/Comp system, tech support-study condition, tools and materials)	x					x			
	Administrative Management Supports	x								
RESOURCES	Facilities; Library, Museum, Cinema, Seminar etc.	x					x			
	Usability of social and technological network	x								
	Training of Technology	x								
	Attractiveness of Events (Exhibition, Shows, Tour, Organizations)	x								
SUPERVISOR'S QUALITIES	Encouragement and Support creative and critical thinking and innovative learning		x				x			
	Usability of creative teaching	x								
	Democratic and cooperative behaviors	x								
	Adaptability to students' needs		x							
	Usability of effective knowledge, skills	x								
	Focus on both process and product	x								
	Promote Freedom	x								
STUDENT'S QUALITIES	Motivation-Willingness		x							
	Intellectual Abilities (synthesis, analysis, practices)		x							
	Level of Patternmaking Knowledge			x						
	Level of patternmaking Skills			x						
	Experience in the past			x						
	Ability to use technology in learning process	x								
	Ability to apply creativity in open-ended projects		x							
	Personality (tolerance of ambiguity, openness to experience, independence of judgment, unconventional values, curiosity, preference for challenges and complexity, self-confidence, risk-taking)		x							
	Level of Research/Willingness to work hard			x						
CONTENT	Main Objectives	x								
	Sub Objectives		x							
	Comprehensiveness of Instruction-Value of Content		x						x	
	Influence of Knowledge	x								
	Effective Application	x

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

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September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

APPLICATIONS	Workload		x					x				
	Organization of workshop (individual-group)	x										
MEASUREMENT/ ASSESSMENTS	The number, variety and frequency of tools (self-instructor-peer or all)		x							x		
	Measurement under acceptable content (knowledge-skills or both)		x									
	Feedback (program development – self-evaluation for student or both)	x										
TIME MANAGEMENT	Time adequacy of course applications		x									
	Time adequacy of practices		x									x
	Time adequacy of measurement and assessments		x									

5. CONCLUSION

Briefly, the data obtained based on the participant observational research method showed that the Cornell University Department of Fiber Science & Apparel Design FSAD 2640 Fashion Draping course content and applications provide a good example for the field of fashion design in higher education. Studio conditions, as well as academic, administrative and technological facilities in the department are quite good and brand new. Library researches are rich, wireless internet is fast and everyone can connect to the network from anywhere on campus. Most of the students are aware of these opportunities and that they are supported by the professor in all of their endeavors. The professor is an energetic guide who actively encourages all the students to gain the knowledge and skills they need for the fashion industry. The course learning strategies and activities are varied and helpful for all of the students. The course instruction is comprehensive, clear and well-planned. Studio

activities are planned ahead of time as much as possible. The use of CAD systems in the course is effective and impressive. Owing to the introduction of this application, students are prepared for their future career. The Cornell Blackboard system, use of projected content, and use of the internet are optimal. Assessment techniques such as project-based assessment, peer review and check lists are democratic, open and satisfying for students. Feedback for each student's work is given every week after class, and, depending on the circumstances, it is done altogether or individually. Thanks to the end-of-semester runway show, the students have an experience related to the business of fashion as soon as they finish their freshman term. Most of them therefore, are aware the process from the initial idea to the runway in terms of technical requirements, aesthetics and marketability. The most important observation is that course content must be developed based on student and colleague engagement, searching for innovation in the fashion industry by the end of the semester.

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

In summary, the course's strengths are in initial preparation, resource availability and engagement with resources, supervisor's qualities and course applications, whereas its weaknesses are student quality and time management. The main reason for this is the lack of students' past experiences. Though students are smart, they are sometimes not prepared, not used to working hard and often feel entitled. Some of them lack patience and application. The course's opportunities are content and assessments.

5.1. COMMENTS

While developing the course framework, it is necessary to incorporate factors from 21st Century Skills. Constructed from these experiences and based on participant observation as well as 21st Century Skills model and Wolf's process approach, a potential model for a more successful draping course was given a frame work (as seen Figure 1).

One of the important factors used to develop the draping course framework was incorporation of learning types (such as conceptual, flexible, lifelong etc.), learning strategies (such as direct or indirect exploratory, individual/interactive experimental, expressional), and methods and techniques. Actual learning approaches are affected by fashion design education methods included in draping.

Figure 1: A Frame work of Fashion Draping Course for Higher Education Adapted: Center for 21th Century Skills (Posner, 2004: 21).

Professional developments mean both actual business and consumer preferences, including garment types, styles and other features. One example of recent developments that impact consumer preferences is the introduction of dress forms that have been changed from their previous shapes, such as from Wolf® to real body shapes, allowing designers to interact with body shapes that are more representative of the consumer resulting in both aesthetic and functional fit improvements.

Creative draping techniques have informed the work of many highly regarded designers. Creative design methods such as Vionett's bias cut technique on the small wood dress form (Golbin, 2009:15-20), Kawakubo's (2013) deconstruction

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

method, Sato's (2014) transformative cutting techniques, and Nakamichi's (2011) Bunka Style method have given us new opportunities in 3D pattern-making. These advances have impacted draping techniques and creative practice.

Again, new tools and materials used in draping make these techniques relatively more accessible. Various types of high quality muslin, a variety of textiles for special garments, precise metal rulers, scaled curves, adhesive style tapes for creating style lines, different kinds of pins used various conditions, both permanent and non-permanent markers, tracing papers and large format carbon papers, etc. simplify technical processes in pattern-making. In this process, computer-aided design (CAD) patternmaking technology is especially useful. Beginning pattern-makers can use CAD patternmaking system for digitizing and printing of patterns obtained from draping. These developments in tools and technologies have impacted pedagogy.

In addition educators and scholars have been using actual approaches to various studio activities in or out of class; or as a blended education. These approaches are different than previous ones, with much less reliance on lecture and multiple demonstrations. Based on that progress, educational standards and assessment techniques have been altered to incorporate individual and group hands-on learning, rubrics, peer assessments, portfolios, project-based assessments, etc. Each audience also is taught to encompass core sub-

jects: global awareness, financial, business and entrepreneurial skills, civic, health and environment literacy. According to 21st Century Skills (Center for 21st century skills), "life and career skills are defined as adaptability and flexibility, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility. Learning and innovation skills are creativity and innovation, critical thinking and problem solving, communication and collaboration. Information, media, and technology skills are included in information, media, and communication technology literacy".

As a result of both observation data and these factors affecting the draping course needs in higher education, this new draping course framework should be consistent with life & career skills, learning and innovation skills and information, and media and technology skills as seen in Figure 1.

A sample draping course framework, process, course subjects, goals and competency was prepared, taking into account the syllabus content and instruction at each institute (Appendix-B). A sample draping course is given Figure 2. Every step can be supported by technological tools and CAD systems depending on institute facilities.

5.2. SUGGESTIONS

○ Designers, pattern-makers, and scholars generally follow a similar process during draping. The process consists mainly of three phases: preliminary, development process and finishing

ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

www.mtddergisi.com

(ISO 9001-2008 Belge No: 12879 & ISO 14001-2004 Belge No: 12880)

(Armstrong, 2013; Klisel, 2013; Crawford, 2012; Valerie, 2011). However, the important point regarding draping at each stage is the usage of the new skills mentioned in Figure 1. Today, the course should consist of new career skills, learning skills, and technological skills appropriate for the fashion industry.

○ All learning strategies, activities and assessments are aimed for high competency.

○ Assessments must be effective and consistent. Each phase can be flexible in itself.

○ As in our daily lives, technological tools and systems are used as much as possible. At Cornell University, the Apparel Design Department has professionally supported high levels of technology and resources. However, schools not having these facilities can explore access in other ways, perhaps by building closer relationships with industry and exploring the use of fashion industry facilities for teaching and use of their technological sources in order to provide technological skills to students.

About Future Work: In this study, a sample draping course framework is presented for developing the curriculum. *Now, it is testing at Department of Fashion Design at Gazi University. The next step is, checking every step, and then review and present to TUBITAK for on-line course content.* The research is limited for the undergraduate-degree beginner level. The course content can also be extended to the graduate and professional advanced level.

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Figure 2: Major Draping Course Content (Core steps)

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ULUSLARARASI HAKEMLİ TASARIM VE MİMARLIK DERGİSİ
INTERNATIONAL REFEREED JOURNAL OF DESIGN AND ARCHITECTURE

Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

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Eylül / Ekim / Kasım / Aralık 2014 Sayı: 03 Cilt: 01 Sonbahar Kış
September / October / November / December 2014 Issue: 03 Volume: 01 Autumn Winter

ID:39 K:42

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APPENDIX-B: DRAPING COURSE FRAMEWORK's SUBJECTS-GOALS-COMPETENCY

SUBJECTS	GOALS	COMPETENCY: (LEARNING OUTCOMES)
Importance and history of Draping in Fashion Design Terms, concepts related issues, Materials and requirements Measurements and proportions for initial draping process	Evaluations of main knowledge related issues Analysis of history of draping in fashion design Understanding of measurement of body Analysis of body parts	<ul style="list-style-type: none"> Identify terms and concepts with draping correctly and comprehensively Deconstruct the importance of draping in the fashion design industry with reason and result, with a focus on knowledge and skills gained
Technological improvements affecting Draping: Mass-customization, Virtual fit, 3D body scanner, laser cutting, CAD, CAM, etc. Examples of Fashion designers using draping techniques	Assessment of technological improvements affecting patternmaking Evaluation of fashion designers using draping examples	<ul style="list-style-type: none"> Discuss technological innovations affecting draping Engage with and address technological improvements in factors affecting draping in fashion design from the past until today, with regard to ultimately addressing today's industry conditions. Assessment of fashion designers' work in terms of draping techniques Summarize technical factors and details affecting draping in fashion
Basic skirt Basic bodice form Basic torso form Elements of Garments (Darts, Sleeves, Collars, etc.) Varies styles on basic form	Transfer of body shape to fabric Application of basic garment forms through draping techniques Application of various garment elements and styles Learn concepts of each application	<ul style="list-style-type: none"> Practice basic draping forms Try different kind of pattern elements Gain experience of variety of styles Apply basic concepts to other styles
Basic Pants Form, Elements of Pants (pocket, waist band, part let etc.)	Examine of basic pants form and elements of pants	<ul style="list-style-type: none"> Prepare of basic pants draping correctly and Apply elements of pants Check all forms in term of suitability, conformity, accuracy.
Pin testing, Balancing, Marking, Notches, Positive and negative ease, Seam allowances,	Perform draping process applications (marking, seam allowances etc.) Perform pin testing and balancing Develop sensitivity and understanding of fabric relationship to body	<ul style="list-style-type: none"> Evaluate draping process. Adjustment pattern accuracy and aesthetics.

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Cutting muslins, Sewing Fitting test CAD skills	Construct and test a prototype muslin, make adjustments. Develop understanding of the difference between the model and the real body Learn CAD tools	<ul style="list-style-type: none">○ Cut and construct prototype muslin○ Fit model and make and record corrections○ Complete necessary draping preliminary, process and finishing steps correctly and in time.○ Digitize pattern pieces into CAD system○ Virtual stitch and test of garment on virtual body○ Print pattern from CAD system for prototype
Project planning	Make a decision about project proposal and criteria	Decide project conditions based on gained knowledge, skills, experience Report of main criteria to consider in project development and assessment
Project Discussion	Transfer of gained knowledge and skills from individual projects	<ul style="list-style-type: none">○ Create design sketches, or trials on the dress forms,○ Create models using learned knowledge and skills,
Prototype	Test new pattern experiments using learned knowledge and skills	<ul style="list-style-type: none">○ Examination of new pattern forms based on sketches or trials on the dress form○ Create prototypes from trial patterns that address both aesthetics and function○ Use CAD system for pattern development
Critique and recreate	Recreate prototypes based on knowledge gained from critiques	<ul style="list-style-type: none">○ Plan prototypes for individual projects presentation appropriate to the classroom climate.○ Presentation of individual projects, explaining process as well as each detail in the collection based on design principles; respond to peers projects○ Re –generate pattern by considering critiques from other participants
Final assessment	Assessment	<ul style="list-style-type: none">○ Verify of prototypes in terms of manufacturing and productivity.○ Confirm the most effective prototypes by resourcing and consulting with target market representatives and peers.
Assembly and Finishing	Prepare pattern pieces for final assembly	<ul style="list-style-type: none">○ Test and finish prototype patterns based on fit analysis on fit model, and manufacturing constraints○ Organize work in individual portfolios from idea to final product patterns
Presentation	Present individual final projects	<ul style="list-style-type: none">○ Present individual projects effectively and clearly.○ Exhibit prototypes in the fashion show format effectively.

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