

Attachment 4

Academic Affairs

Discussion Agenda Supplemental Information – New Degree Proposal

Faculty Senate Review –June 11, 2019 Meeting

<https://kstate.curriculog.com/agenda:729/form>

Architecture, Planning and Design

Master of Industrial Design (Non-Baccalaureate Track)

Contact person(s) for this proposal: Nathan Howe, nhowe@ksu.edu, 2-5950

Program Name: Master of Industrial Design (Non-Baccalaureate Track)

Rationale: The Department of Interior Architecture & Product Design has long been recognized for its excellence. The Industrial/Product Design field has grown significantly since the inception of the M IAPD program, creating a demand for a degree program focused on industrial design. The department response to this new demand capitalizes on the strengths of APDesign and IAPD non-baccalaureate offerings and seeks connections with other programs across campus to develop this new offering, meeting a regional need for such a program.

Impact Statement: MATH 100, PHYS 115, and COMM 105 from the Department of Mathematics, the Department of Physics, and the Department of Communication Studies within the College of Arts & Sciences are part of the common first year experience at APDesign entitled "Environmental Design Studies Program".

ENGL 200, ART 303, IMSE 250, ENTRP 340, and ENTRP 350 from the Department of English, the Department of Art (both of A&S), the Department of Industrial & Manufacturing Systems Engineering in the College of Engineering, and the Center for the Advancement of Entrepreneurship in the College of Business Administration will provide key content to M INDD students throughout their time in the program.

IAPD Department Head Nathan Howe has contact all units regarding this opportunity in addition to communicating opportunities within APDesign and is working to obtain written support of the proposed program.

New courses associated: IAPD 431, IAPD 602, IAPD 603, INDD 310, INDD 320, INDD 325, INDD 350, INDD 435, INDD 440, INDD 500, INDD 606, INDD 800, INDD 801, INDD 810, INDD 811, INDD 815, INDD822

Program Approval

I. General Information

A. Institution Kansas State University

B. Program Identification

Degree Level:	Master
Program Title:	Industrial Design
Degree to be Offered:	Master of Industrial Design
Responsible Department or Unit:	Interior Architecture and Product Design
CIP Code:	50.0404
Modality:	Face to Face
Proposed Implementation Date:	Fall of 2020

Total Number of Semester Credit Hours for the Degree: 170

II. Justification

The Master of Interior Architecture & Product Design (M.IAPD) is a five-year accredited degree which first introduced Product Design in 1985. Exposure to Product Design is acquired through two studio sections with the potential for students to focus on the topic for their design theses. While this model has created highly successful interior architects and furniture designers ready for the profession, the program has seen less success in the product/industrial design realm. The shortcoming of the M.IAPD is due to the inability to incorporate detailed manufacturing and greater depth in product development processes while maintaining the appropriate credit hour to degree completion total. The shortcoming has in turn caused difficulties in properly preparing students for a career in Industrial Design, as well as in retaining product/industrial design faculty.

The Master of Industrial Design (M.INDD) will address this shortcoming. This new degree program leverages 19 courses from our current curriculum (for a total of 56 credit hours, specifically in foundation design skills and sharing the furniture design courses), renovated and expanded existing facilities that APDesign occupies, and current faculty strengths. Industrial design bridges engineering, art and business. These other disciplines prepare the designer to understand the manufacturing process (Industrial Engineering), how to best communicate the ideas professional (Art) and the practices in bringing the product to the market place (Entrepreneurship). The departments listed have existing course work available and have expressed their willingness to welcome our students to provide these key connections to the industrial design program.

The proposed 5-year professional master's degree will be the only one of its kind in the country. Through our research of over 80 schools with industrial design degree programs, we have found that other schools with five-year degrees are 150+ hours to receive a bachelor's degree. Within the curriculum the students will also be required (as in all of our College degree programs) to participate in a study abroad experience

and complete a professional internship. The department also plans to develop a post-baccalaureate offering once the non-baccalaureate program becomes established. This will allow graduates with other undergraduate degrees in the Kansas regent system to receive their masters while remaining in Kansas.

Capitalizing on existing expertise within the college, connections with key alumni and industry, this degree program will focus on products within the interior environment realm and transportation. We have already been working with industrial partners in furniture, plumbing fixtures and helicopter interiors. These types of projects afford our students great exposure to the industry.

The National Association of Schools of Art and Design (NASAD) is industrial design programs' accrediting body. With the product design aspect in the M.IAPD we are already accredited by NASAD. We will be applying to extend that same accreditation to the new program. NASAD has already been contacted and has been made aware of our plans and schedule.

III. Program Demand:

A. Survey of Student Interest

Number of surveys administered:	54
Number of completed surveys returned:	50
Percentage of students interested in program: ...	24%

In the spring of 2019, a survey was conducted of first year students already interested in our current M.IAPD degree. The survey attempted to identify the number of students who might be interested in migrating to a new M.INDD program when it is established. Of the 50 responses, 26 desired to pursue the M.IAPD degree track, 12 indicated a desire to pursue the M.INDD track and 12 were undecided. These numbers indicate a considerable desire for the M.INDD degree already reflected in the student body. This is particularly revealing since we have not advertised the proposed program during the recruitment of the surveyed cohort.

B. Market Analysis

Industrial Design Schools Market Competition

Through our research of over 80 schools with industrial design programs, we created a map highlighting the locations of US institutions with industrial design programs (Figure 1). When viewed in consultation with Bureau of Labor Statistics job market demands map (Figure 2, located in Section V. Employment), one can see the need for greater education opportunities for industrial designers in the Midwest. The University of Kansas (BFA in Industrial Design) is the closest institution with an



Figure 1. Mapping of all Industrial Design schools in the US.

Source: Department of Interior Architecture & Product Design, K-State

industrial program to K-State, the southern 1-35 corridor and Kansas City. Iowa, Colorado and Texas each have only one institution providing education opportunities to this field while Illinois has three. Of these programs, only Iowa State offers a master's degree. Kansas is uniquely positioned with the recent expansion of the Midwest Student Exchange Program (MSEP) and we believe that K-State can draw students from not only Kansas and Missouri, but from MSEP states as well.

Potential Student Population

Students interested in Industrial Design have applied to APDesign because our department's current degree has the product design emphasis. However, we often do not capture this audience because it is only a portion of the M.IAPD degree. This interest ranges between 3-5% of 300-390 students a year that apply to the college which amounts to 9-20 students that potentially chose to go elsewhere.

Currently, without advertising or having the degree in place, there is an entire studio (12 to 16 students) ready to take the M.INDD degree. These numbers do not adversely impact the other degree programs in our college, as in 2018-19 we enrolled 18 more students into APDesign's first-year curriculum than the entire college normally admits. This degree path is uniquely positioned to bring a whole new population of design students to the college from not only Kansas but through the Midwest Student Exchange program.

The College of Architecture, Planning & Design along with alumni partners have been diligently working to develop relationships with Kansas high schools that have developed specialized curricula to introduce and mentor students towards careers in architecture, design and engineering (e.g., Blue Valley Center for Advanced Professional Studies, Shawnee Mission Project Lead the Way, Olathe Environmental Design, KCK Sumner Academy, Topeka Center of Advanced Learning and Careers). These relationships will also be valuable to our Industrial Design degree program. APDesign students, both from IAPD and other departments, have worked with students from the Kansas City, Kansas schools of JC Harmon and

Sumner Academy, helping to develop design process curricula and to expose students to how design influences the world we live in.

Partnership

We have established significant corporate relationships that enhance our student’s educational experience. The first is with OFS Brands, one of the ten largest commercial furniture manufacturers in the US. Our graduate students work closely with OFS employees to develop new furniture products for manufacture. This five-year relationship has already produced two products out in the market place with one more in the manufacturing pipeline. Additionally, we have also established a three-year commitment with an international plumbing manufacturer. Our agreement is to perform blue-sky product development in our undergraduate studios and then a deeper-dive product-specific development with our graduate students in their design theses. We also have sponsorship by an international helicopter manufacturer on blue-sky product development for the interiors of their latest VIP helicopter line. The current partnerships are in place with the M.IAPD. With the M.INDD, there is potential to build an even broader base of industrial partnerships.

Additionally, the Kansas Department of Commerce has made Advanced Manufacturing a major initiative to entice manufacturers to Kansas, building on its rich history in the Aeronautic industry according to the KDOC (2017). This degree path will play a significant role in providing an industrial design talent pool for these manufacturers.

IV. Projected Enrollment for the Initial Three Years of the Program

Year	Headcount Per Year		Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	16		544	
Year 2	16		1088	
Year 3	16		1712	

Please note, the implementation year of the degree program will start with our second-year students due to the nature of our college’s first-year program being a shared curriculum for all degree paths in the college.

V. Employment

From data provided by the Bureau of Labor Statistics, the regional locations needing Industrial Designers follow the major metropolitan areas of Denver, Dallas, Austin, Houston, Kansas City, Wichita, Omaha, St. Louis, Sioux Falls and Chicago. As stated before, only seven schools with industrial design degrees are in this region, and only one provides a master's degree. This means the majority of employees in this region are being educated outside of this state and region.

According to Nichols (2013) the industrial design field has a potential growth of 10.5% between 2010-2020 in the US. According to Job Outlook (2018, Figure 2) there is 5% growth in the US job market. Kansas specifically offers 60-150 industrial design jobs. A recent search of Indeed.com for job openings in this field totaled over 50, mostly in Kansas City metropolitan area, Wichita, Salina and South Hutchinson. Two of the target states K-State recruits from are Texas and California. California is one of the top states employing industrial designers, and California and Texas are two of the top states in payroll for industrial designers (Nichols 2013). Our degree also adds a robust furniture design curriculum allowing our graduates alternative employment paths.

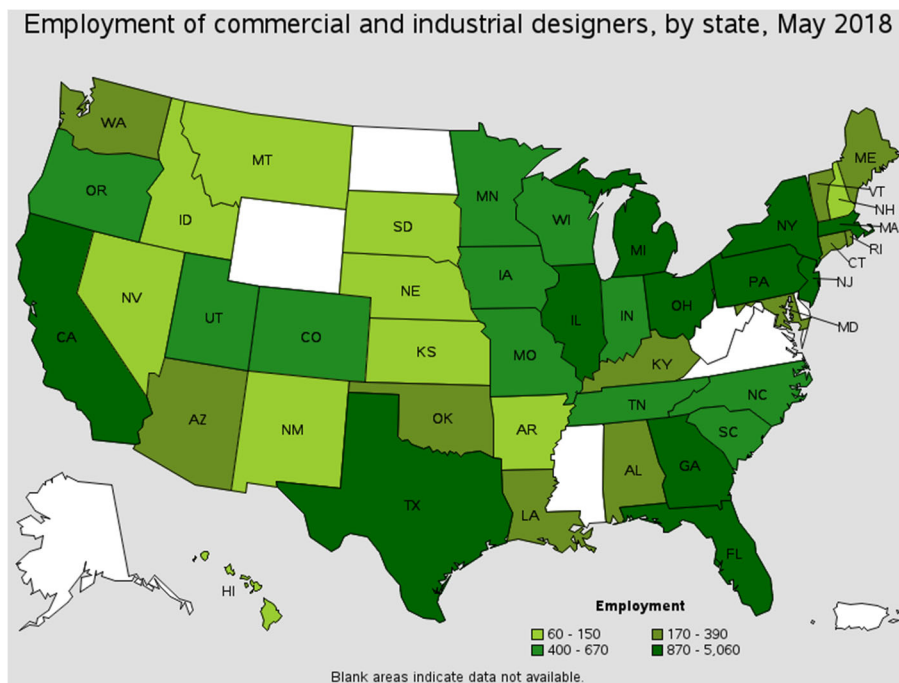


Figure 2. Employment of Commercial and Industrial Designers from the Occupational Employment Statistics (2018).

VI. Admission and Curriculum

A. Admission Criteria

Admission to the College

The College of Architecture, Planning and Design is a selective admission college. Admission is based upon high school GPA and ACT/SAT scores, or for transfer students, transfer cumulative GPA. Admitting approximately 180 students each year to the Environmental Design Studies program (ENVD), students are exposed to foundational skills required for success in each of the college's master's programs. In the spring of their first year, after learning more about each program and profession, students apply to their desired master's program, continuing on this path until their graduation with a master's degree after a total of five years of study.

Approximately 7-12 transfer students are admitted each year, either into advanced placement in the non-baccalaureate programs or in the post-baccalaureate offering of the master's program depending on prior experience.

APDesign also maintains numerous articulation agreements with other educational institutions. Most transfers from these agreements come from UMKC. Our UMKC agreement allows students from the KC Metro to begin coursework at UMKC in a duplicate curriculum. Students then transfer directly to K-State after their first or second year depending on degree path criteria, thus allowing students the opportunity to remain closer to home to alleviate costs associated with degree completion. The M.INDD would require students from UMKC to transfer after the first year.

Admission to the Degree Program

Similar to existing majors in architecture, interior architecture and product design, landscape architecture, regional and community planning, students will not declare a major in industrial design until early in the second semester of study. Progression to the degree-granting programs in 2nd year is based upon successful completion of the first year ENVD program and cumulative K-State GPA. Because all APDesign programs are five-year master's degree programs and students in these programs will apply to the Graduate School mid-way through their third year, a strong cumulative GPA in first year is important.

B. Curriculum

New Courses in **Bold**

Year 1: Fall

SCH = Semester Credit Hours

Course #	Course Name	SCH
ENVD 201	ENVIRONMENTAL DESIGN STUDIO I	4
ENVD 250	HISTORY OF DESIGNED ENVIRONMENT I	3
ENVD 203	SURVEY OF DESIGN PROFESSIONS	1
ENVD 204	STUDIO SEMINAR	1
MATH 100	COLLEGE ALGEBRA	3
COMM 105	PUBLIC SPEAKING 1A	2
	GENERAL ELECTIVE	3
	TOTAL	17

Year 1: Spring

Course #	Course Name	SCH
ENVD 202	ENVIRONMENTAL DESIGN STUDIO II	4
ENVD 251	HISTORY OF DESIGNED ENVIRONMENT II	3
PHYS 115	DESCRIPTIVE PHYSICS	5
ENGL 100	EXPOSITORY WRITING I	3
	TOTAL	15

Year 2: Fall

Course #	Course Name	SCH
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IAPD 307	IAPD & INDD DESIGN STUDIO I	5
IAPD 430	VISUAL COMMUNICATION I	2
IAPD 456	INTRO TO PRODUCT/INDUSTRIAL DESIGN	2
IAPD 248	FUNDAMENTALS OF ARCH. TECHNOLOGY	3
ARCH 350	HISTORY OF DESIGNED ENVIRONMENT III	3
ENGL 200	EXPOSITORY WRITING II	3
	TOTAL	18

Year 2: Spring

Course #	Course Name	SCH
INDD 320	INDD DESIGN STUDIO II	5
IAPD 407	DESIGN WORKSHOP I	3
IAPD 412	DESIGN WORKSHOP STUDIO I	1
IAPD 431	VISUAL COMMUNICATION II	2
IMSE 250	INTRO. MANUFACTURING PROCESSES & SYSTEMS	2
INDD 325	PRODUCT SEMANTICS	3
	TOTAL	16

Year 3: Fall

Course #	Course Name	SCH
INDD 435	INDD STUDIO III	5
IAPD 803	DESIGN WORKSHOP II	3
IAPD 802	DESIGN WORKSHOP STUDIO II	1
INDD 310	INDD DIGITAL APPLICATIONS	2
INDD 350	HUMAN FACTORS	3
IAPD 416	HISTORY OF FURNITURE	3
	TOTAL	17

Year 3: Spring

Course #	Course Name	SCH
INDD 440	INDD DESIGN STUDIO IV	5
INDD 500	MATERIALS & MANUFACTURING PROCESSES	3
LAR 311	UNLOCKING CREATIVITY	3
IAPD 625	LIGHTING	3
ART 303	GRAPHIC DESIGN FOR NON-MAJORS	3
	TOTAL	17

Year 3: Summer

Course #	Course Name	SCH
IAPD 664	SUMMER INTERNSHIP	6
IAPD 645	SUMMER INTERNSHIP REPORT	1
	OR	
	STUDY ABROAD	7
	TOTAL	7

Year 4: Fall

Course #	Course Name	SCH
IAPD 644	INTERNSHIP	9
IAPD 645	INTERN REPORT	5
	OR	

	STUDY ABROAD	14
	OR	
INDD 606	INDD DESIGN STUDIO V	5
	ELECTIVES	9
	TOTAL	14

Year 4: Spring

Course #	Course Name	SCH
INDD 811	DESIGN RESEARCH	3
INDD 801	INDD DESIGN STUDIO VI	5
INDD 813	DESIGN WORKSHOP III	3
INDD 814	DESIGN WORKSHOP STUDIO III	1
INDD 800	PROFESSIONAL PRACTICE	3
ENTRP 340	INTRO TO ENTREPRENEURSHIP	3
	TOTAL	18

Year 5: Fall

Course #	Course Name	SCH
INDD 810	INDD CAPSTONE STUDIO	5
INDD 815	ADVANCED STUDIO PROGRAMMING	2
ENTRP 350	TECHNOLOGY & INNOVATION MANGT.	3
	GENERAL ELECTIVES	6
	TOTAL	16

Year 5: Spring

Course #	Course Name	SCH
INDD 822	ADVANCED INDUSTRIAL DESIGN STUDIO	6
	OR	
IAPD 824	ADVANCED FURNITURE STUDIO	6
IAPD 891	CONTEMPORARY DESIGN SEMINAR	3
	GENERAL ELECTIVES	6
	TOTAL	15

Total Number of Semester Credit Hours 170

VII. Core Faculty

Note: * Next to Faculty Name Denotes Director of the Program, if applicable
 FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure-Track Y/N	Academic Area of Specialization	FTE to Proposed Program
David Brown	Assoc. Prof.	Masters	N	Furniture Design	.25
Steve Davidson	Assist. Prof.	Masters	N	Furniture Design	.25
Mekin Elçioglu	Assist. Prof.	PhD	Y	Industrial Design	1.0
Chris Fein	Assist. Prof.	Masters	N	Architecture	.25
Robyn Gibson	Instructor	Masters	N	Interior Architecture and Product Design	1.0
Paolo Grazioli	Assist. Prof.	Masters	Y	Industrial Design	.50
Hernan Gregorio	Instructor	Bachelors	N	Industrial Design	.75
Neal Hubbell	Assoc. Prof.	Masters	N	Interior Architecture and Contract Furniture	.50
Nathan Howe*	Assoc. Prof.	Masters	N	Architecture	.35
Katrina Lewis	Assoc. Prof.	Masters	N	Environmental Design	.50
Michael McGlynn	Assoc. Prof.	Masters	N	Architecture	.25
Furniture Faculty (New Hire, Existing Faculty Line)	Assist. Prof.	Masters	Y	Furniture Design	.50

Over the program's first three years we would be hiring four new faculty to support this degree path.

Number of graduate assistants assigned to this program **3**

VIII. Expenditure and Funding Sources (List amounts in dollars. Provide explanations as necessary.)

A. EXPENDITURES	First FY	Second FY	Third FY
Personnel – Reassigned or Existing Positions			
Faculty	86,697	173,394	260,092
Administrators (other than instruction time)	10500	21000	31500
Graduate Assistants	5625	11250	16875
Support Staff for Administration (e.g., secretarial)	5000	10000	15000
Fringe Benefits (total for all groups)	26,956	53,911	107,740
Other Personnel Costs	0	0	0

Total Existing Personnel Costs – Reassigned or Existing	134,778	269,555	431,207
Personnel – – New Positions			
Faculty	0	60000	180000
Administrators (<i>other than instruction time</i>)	0	0	0
Graduate Assistants	0	0	0
Support Staff for Administration (<i>e.g., secretarial</i>)	0	0	0
Fringe Benefits (<i>total for all groups</i>)	0	22000	59000
Other Personnel Costs - Fabrication Staff Position	0	28000	56000
Total Existing Personnel Costs – New Positions	0	110000	295000
Start-up Costs - - One-Time Expenses			
Library/learning resources	2000	2000	2000
Equipment/Technology	3000	12000	12000
Physical Facilities: Construction or Renovation	0	0	0
Other	1000	1000	1000
Total Start-up Costs	6000	15000	15000
Operating Costs – Recurring Expenses			
Supplies/Expenses	2000	2000	2000
Library/learning resources	2000	2000	2000
Equipment/Technology - Startup \$6000 per faculty	4000	4000	4000
Travel	10000	10000	10000
Other	2000	2000	2000
Total Operating Costs	20000	20000	20000
GRAND TOTAL COSTS	160,778	414,555	761,207

B. FUNDING SOURCES <i>(projected as appropriate)</i>	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition / State Funds SCH from table times		184,449	380,064	649,176
Student Fees Tech Fee times SCH		29,920	59,840	94,160
Other Sources		28,000	28,000	28,000
GRAND TOTAL FUNDING		242,369	467,904	771,336

C. Projected Surplus/Deficit (+/-) (Grand Total Funding <i>minus</i> Grand Total Costs)		81,591	53,349	10,129
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IX. Expenditures and Funding Sources Explanations

A. Expenditures

Personnel – Reassigned or Existing Positions

Given the nature of the overlap between our current M.IAPD degree and the M.INDD degree, only a few of our faculty would need to be reassigned a portion of their FTE.

Reassigned

- David Brown .25 FTE
- Furniture Faculty .50 FTE
- Mekin Elçioğlu .50 FTE
- Nathan Howe .35 FTE

Existing Positions

- Steve Davidson .25 FTE
- Chris Fein .25 FTE
- Hernan Gregorio .75 FTE
- Robyn Gibson 1.0 FTE
- Paolo Grazioli .50 FTE
- Neal Hubbell .50 FTE
- Katrina Lewis .50 FTE
- Michael McGlynn .25 FTE

Personnel – – New Positions

Over the course of the first three years of the added Industrial Degree path, there would be increased income to the department due to added credit hour production and shared percentage of credit hours outside the department taken by the industrial design students. In the first year this would yield ~\$100,000. The second and third year of the program the yield would increase by ~\$150,000 for each year. Four additional faculty hires would need to be made, two in the second year and another two in the third year. This additional income from increased credit hour production would be used to justify the need for these hires.

With the addition of more Workshop courses we would need additional staffing in our fabrication lab. This would amount to a full-time technical staff position.

Start-up Costs – One-Time Expenses

There are very little startup costs needed for this degree path. Seaton and Regnier Halls were designed to increase enrollment from ~700-850. Impact of additional students would only add a need for additional studio desks, work benches in the workshop and 10 additional seats in our computer lab.

The only other start-up costs would be seen in equipment and startup packages for the four new faculty. Over the course of the first three years this would amount to \$6000 for each new faculty member.

Operating Costs – Recurring Expenses

The current department operating costs are approximately \$50,000 per year, the additional \$20,000 per year reflected above is an estimate of the general operating expenses the additional faculty and student body administration would incur. Also calculated is the new program's portion of college staffing expenses.

B. Revenue: Funding Sources

The increased credit hour production with the degree would be the major funding source. There are a few of our core courses that would be taken by both of our degree programs which would increase credit hour production with no additional funding source. We have added three new studio sponsorships in the last year with the new degree program the possible sponsorships will increase.

Additionally, there is a \$55 technology fee for each credit hour. This increased revenue is not accounted for in the personnel increase in income discussed previously. The estimated technology fee produced with this new degree program would be year one \$30,000, year two \$60,000, and year three \$100,000. These funds would be targeted to defray the costs of the start-up costs referred to previously.

C. Projected Surplus/Deficit

Given projected enrollment numbers, increase in credit hour production, leveraging of current courses within college and department there is no perceived deficit. Over the course of 3 years the total projected surplus of ~\$150,000 is after the addition of new personnel expenses. If the entire 5-year program is considered with the additional credit hour production the surplus would be an additional ~\$500,000.

X. References

Job Outlook. (2018). *Job Outlook for: Industrial Designers*. Retrieved March 31, 2019 from <https://job-outlook.careerplanner.com/Industrial-Designers.cfm>

Kansas Department of Commerce. (2017). *Kansas Data Book 2017*. Retrieved April 8, 2019 from <https://www.kansascommerce.gov/wp-content/uploads/2018/11/DB2017.pdf>

Nichols, Bonnie. (2013). *Valuing the Art of Industrial Design*. Retrieved March 22, 2019 National Endowment for the Arts. Arts.gov

Occupational Employment Statistics (2018). *Occupational Employment and Wages, May 2018, 27-1021 Commercial and Industrial Designers*. Retrieved March 31, 2019 from <https://www.bls.gov/oes/current/oes271021.htm#st>

Figures

Figure 1. Interior Architecture and Product Design. (2019). *Map of United States Industrial Design Degree Programs*.

Figure 2. Occupational Employment Statistics (2018). *Occupational Employment and Wages, May 2018, 27-1021 Commercial and Industrial Designers*. Retrieved March 31, 2019 from <https://www.bls.gov/oes/current/oes271021.htm#st>