LETTER OF NOTIFICATION – 3

NEW OPTION, EMPHASIS, CONCENTRATION, or MINOR

(Maximum 18 semester credit hours of theory courses and 6 credit hours of practicum courses)

1. Institution submitting request: University of Arkansas, Fayetteville

1. Contact person/title:

Name (Provost/Academic Affairs Officer): Dr. Terry Martin, Senior Vice Provost for Academic Affairs

1. Phone number/e-mail address: (479) 575-2151 / tmartin@uark.edu
2. Proposed effective date: Fall 2020
3. Title of existing degree program:

(Indicate if the degree listed above is approved for distance delivery)

Master of Design Studies (M.Des.). There is no distance delivery at this time.

1. CIP Code: 04.0201 Architecture
2. Degree Code: 1885
3. Proposed name of new option/emphasis/concentration/minor (circle one):

Master of Design Studies Concentration in Integrated Wood Design

1. Reason for proposed action:

The University of Arkansas and the Fay Jones School of Architecture and Design proposes a new concentration addressing contemporary challenges relative to increasing demand for expertise in wood materials and expanding industrial production of emerging engineered wood products. An Integrated Wood Design concentration will provide post-professional graduate study in one of the most rapidly growing areas of design and construction.

1. New option/emphasis/concentration/minor objective:

The Integrated Wood Design concentration will provide post-professional design education in this rapidly growing market segment. The concentration specifically provides intellectual development and knowledge dissemination, making available value-added expertise and skill in timber and wood products that underpin one of the state’s major industries and assets. The curriculum combines existing and new coursework and growing expertise to provide time- and cost-effective value to existing professional design degrees. The Master of Design Studies with a concentration in Integrated Wood Design is available to new graduates as well as experienced practitioners seeking professional value and career advancement through this course of study.

No similar program exists within Arkansas or the neighboring states. Led by Europe and Canada, tremendous advances have been made in the design, engineering, production, fabrication, and application of wood products for the construction industry in the last 15 years. The U.S. now is being tapped for its timber resources, manufacturing capacity, and wood design/engineering expertise, yet there is a dearth of timber design education at universities across the country. Arkansas’ wide availability of timber, existing educational programs in forestry and forest technology, central geographic location, and the U of A’s current investment in timber architecture affords resources to these educational and professional prospects essential to the state’s economic expansion.

1. Provide the following:
   1. Curriculum outline - List of courses in new option/emphasis/concentration/minor – Underline required courses.

Fall Semester

FJAD 6833 Wood Theories, Tectonics, and Environmental Response

Elective (3) 1

Spring Semester

FJAD 6843 Advanced Wood Production Processes

Elective (3) 1

Students pursuing the Integrated Wood Design concentration will choose 6 hours from SUST 5103 Analysis and Design of Resilient Systems, SUST 5203 Decision Making, Analysis and Synthesis in Sustainability, and CVEG 4353 Timber Design.  Dependent upon previous coursework and experience, the remaining 6 hours of graduate level, elective courses may be selected from Civil, Mechanical, Industrial Engineering, Environmental Dynamics, and/or the School of Forestry and Natural Resources at the University of Arkansas at Monticello. These substitutions require approval from the Graduate Advisor.

* 1. Provide degree plan that includes new option/emphasis/concentration/minor.

Fall Semester

FJAD 6906 Advanced Design Studio

FJAD 6723 Methods of Design Inquiry

FJAD 6833 Wood Theories, Tectonics, and Environmental Response

Elective (3)

Spring Semester

FJAD 6916 Advanced Design Studio II

FJAD 6803 Design Leadership

FJAD 6843 Advanced Wood Production Processes

Elective (3)

Summer

FJAD 6926 Graduate Residency

* 1. Total semester credit hours required for option/emphasis/concentration/minor

(Option range: 9–24 semester credit hours)

36 Credit Hours (12 hours are unique to the concentration)

* 1. New courses and new course descriptions

FJAD 6833 Fundamental Wood Theories, Tectonics, and Environmental Response. Examines wood design through theoretical, technical and practical inquiry with emphasis on tectonics in response to material and environmental aspects. Areas addressed include wood anatomy, physical and mechanical characteristics, tectonics and aesthetics, and wood performance related to structural design, energy, fire-resistance, acoustics, renewability, resiliency and healthy living.

FJAD 6843 Advanced Wood Production Processes. Explores the impact of wood production, fabrication and construction processes on the design of industrial wood products, structures, and construction for buildings. Investigations are conducted through simulation of design and assembly at multiple scales, of a variety of engineered and hybrid wood/timber materials, applying contemporary and emerging fabrication technologies.

* 1. Goals and objectives of program option/emphasis/concentration/minor
  + Enable graduates to pursue careers grounded in the design, manufacturing, and construction of wood and timber environments and products.
  + Enhance state and regional resources and economic development with the advanced study and design of wood and timber environments.
  + Develop learning resources in emerging technologies and fabrication processes benefitting individual goals and industry demands.
  1. Expected student learning outcomes

At the conclusion of this program, students will be able to:

* + Articulate the interconnected spatial, environmental, and technical systems that inform design solutions utilizing emerging wood and timber technologies.
  + Implement cutting-edge technologies and the production and manufacturing of wood products to create safe and sustainable structures.
  + Identify emerging and critical issues in the domain of wood relative to a range of building scales and typologies.
  + Generate comprehensive design solutions to resolve emerging and complex issues utilizing timber and wood technologies.
  1. Documentation that program option/emphasis/concentration/minor meets employer needs (if applicable)

As documented below, our research illustrates demand within Arkansas and across the U.S. for individuals holding advanced design degrees with wood and timber specialization. The *State of Arkansas Long-Term Industry and Occupational Projections*, published by the Arkansas Department of Workforce Services, indicate the Architecture and Engineering Occupations alone could add 800 jobs in Arkansas between 2014 and 2024. For the same period, in-state projected job growth for architects is 9.40%; commercial and industrial designers is 8.96%; and interior designers is 3.90%. The *U.S. Bureau of Labor Statistics* (2017) predicts a healthy 4% job growth for these positions between 2016 and 2026. ([https://www.bls.gov/oes/current/naics4\_541400.htm](https://www.bls.gov/oes/current/naics4_541400.htm#_blank)). The *State of Arkansas Long-Term Industry and Occupational Projections, Education Outlook* states "Jobs requiring a master’s degree could see the largest percent growth, with 16.83 percent growth over the 10-year period…”, and occupations requiring a professional degree follow close behind with 16.72 percent growth expected.

More specific to the proposed concentration, research conducted by the *Arkansas Forest Resources Center and the School of Forestry and Natural Resources at the University of Arkansas at Monticello* reveals that the forest industry is the single largest sector of agriculture in the state representing 5% of the state’s economy. The total value-added impact to the State of Arkansas in 2016 by the forest industry was 6.3 billion dollars; providing jobs in 86% of all economic sectors in Arkansas.

Collectively, this data suggests that the value added by a post-professional or master’s degree in integrated wood technologies will be highly desired by the architecture and design industry and by businesses seeking to enter or advance specialized wood design practice, capacities and production. The outlook appears especially strong in light of recent and emerging breakthroughs that research and development in new wood processes and digital fabrication promise.

In the letters of support received from around the state and the country, there is a clear demand for graduates from this program. Beginning with the local respondents, Steve Kinzler, AIA, President and co-founder of Polk, Stanley Wilcox Architects,stated that his firm is convinced that this program will draw students from the country and beyond, and will play a major part in meeting the AIA 2030 challenge. ChrisBaribeau, AIA, Principal, MODUS Studio, indicated that that if he had graduates of this unique program on his team during the design and highly technical process of structural coordination of the University of Arkansas Stadium Drive Residence Halls, they would have made a significantly positive impact on the project. He also voiced his enthusiastic support of students from this program through any means possible including guest lectures, student project collaborations, and their internship program at Modus Studio. Roger Boskus, AIA, founder of Miller Boskus and Lack, is eager to support this program through students’ internship, scholarship and collaboration, and echoed the same sentiment about mass timber leading the future in construction, and forecasting that soon we will be experiencing a monumental shift from steel and concrete structural systems to the widespread use of wood and mass timber products for almost every type of building.

Among the national voices expressing an unqualified support of the program, two are paraphrased here. Alan Organschi, Principal, Gray Organschi Architecture who has a long record of experience with renewable, wood-based design and construction, uttered a clear demand for employees, as well as collaborating professional consultants with strong backgrounds and skillsets in this area. From research that his firm has conducted as part of their Timber City Research Initiative, he surmised that the new Integrated Wood Design post-professional program will be unprecedented in the United States and will allow for advanced study of cutting-edge design practices and innovative material applications of wood in architecture. Andrea P. Leers, FAIA, Principal, Leers Weinzapfel Associates Architecture + Urban Design reiterated that this wood design concentration will place the Fay Jones in the vanguard of research and application of a dynamic new technology based on a sustainable and humane old building material. She also commented that at her firm they would be pleased to support this program through student residencies, visiting workshops, and research collaboration. With genuine enthusiasm, she encouraged the school to take leadership in the area of wood design, to benefit the design professions, the state’s economic development, and the sustainable environment we are creating for the future.

Support of this program also emanated from retail and construction companies. Mr. JP Suarez, Executive Vice-President of Walmart, declared that “Walmart would highly value the myriad of benefits for this University of Arkansas program moving to lead in this emerging industry. The graduate of such a program would be seen as potential innovators who may assist Walmart and others in the use of Integrated Wood Design from a design and construction standpoint, but also more broadly in the potential of innovative products designed and produced for sale in our stores and online. Greg William, CEO, Nabholz Construction, emphasized that such a degree will advance employees in their career and will expand the application of wood in the design and construction of buildings. This quote from Patrick Tenney, AIA, President, NWA Division, Baldwin & Shell Construction Co., perfectly summarizes the need of future graduates from this program: “Graduates with expertise in emerging wood design practices will give us a competitive edge in this emerging market and I can assure any graduates from this program will be viewed positively if they choose to pursue a position with Baldwin & Shell Construction Co.”

The letters summarized above can be viewed in their entirely in Appendix A. There are a total of fifteen letters from state, regional, and international design firms, businesses, and manufacturers.

* 1. Student demand (projected enrollment) for program option/emphasis/concentration/minor

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Master of Design Studies | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Concentration in Integrated Wood Design | 5 | 10 | 10 | 10 | 15 |

i. Name of institutions offering similar program option/emphasis/concentration/minor and the institution(s) used as a model to develop the proposed program option/emphasis/concentration/minor (if applicable)

This initiative to establish an M.Des concentration in Integrated Wood Design has no parallels locally or nationally, in terms of design emphasis. There are no other graduate-level design programs in the state of Arkansas in architecture, interior design, or landscape architecture. Within a 250-mile radius, there are six institutions offering graduate degrees in one or more of the three disciplines represented in the Fay Jones School. None of these institutions offer a graduate degree in Integrated Wood Design.

The AA School of Architecture at Hooke Park, London, England, and Aalto University in Helsinki, Finland are the only two international institutions that offer a similar graduate program. At the national level, schools of architecture limit wood education to one or two courses. The remaining institutions which are primarily located in Schools/Colleges of Forestry and/or Civil engineering mainly provide coursework and degrees in wood and timber engineering, but not design.

**US Institutions**

University of Massachusetts - School of Earth and Sustainability. Degree offered: Bachelor of Science in Building and Construction Technology with few courses on wood.

Oregon State University - School of Forestry, Department of Wood Science Engineering. National Center of Excellence for Advanced Wood Products Manufacturing and Design is run in partnership between Oregon State University and Virginia Tech with engineering research focus.

Oregon Wood Innovation Center. established for research, knowledge dissemination about wood. Degree offered: Bachelor of Science in Renewable Materials, M.Sc. and Ph.D. in wood science

University of Oregon - Department of Architecture. Degree offered: None. Wood courses: 2.

University of Washington, Seattle – Center for Wood Innovation. Established for research collaboration between Department of Architecture and College of the Environment. Degree offered: None. Wood courses: 2 (Studio - irregular).

Clemson University - Wood Utilization + Design Institute. Established to promote multidisciplinary research collaboration between multiple colleges. Degree offered: None. Wood courses: 2 (Studio - irregular).

North Carolina State University – College of Natural Resources. Degree Offered: [B.S. in Sustainable Materials and Technology](http://oucc.dasa.ncsu.edu/cnr-15smtbs-nosubplan-2138/) with engineering focus.

1. Institutional curriculum committee review/approval date: January 16, 2019
2. Will the new option/emphasis/concentration/minor be offered via distance delivery? If yes, indicate mode of distance delivery:

There are no plans to offer this degree via distance at this time.

1. Explain in detail the distance delivery methods/procedures to be used:

N/A

1. Specify the amount of additional costs required for program implementation, the source of funds, and how funds will be used.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Source |
| One Faculty Line, Associate or Full | $185,000 | $150,000 | $150,000 | Reallocation of existing faculty lines. See justification below.  Foundation (Endowed Chair) |
| Marketing + Recruitment | $15,000 | $5,000 | $5,000 | FJAD Annual Budget |
| Research Start Up | $100,000 | $100,000 | $100,000 | Provost and Foundation |
| Office Set Up and Computing | $5,000 | $5,000 | $ 5,000 | Dept Tech Funds |

Salary / Search: 1 Yr Salary + Fringe $150,000 + Search $25,000 + Relocation $10,000

Marketing and recruitment for new concentration to include: Travel $3000; Web + Print Dev $2000; Events $2000; Mailings $8000; Services $1000

Faculty lines for delivering the M.Des. coursework have been allocated in LoN and approvals for our first two concentrations in Resiliency Design and in Retail and Hospitality Design. These positions are conceived fluidly in the context of current FJAD hiring and faculty recruiting. It is likely that course delivery for these concentrations will be achieved through current searches for open positions in interior design and landscape architecture, freeing a graduate faculty line for the proposed wood concentration.

Fay Jones School advancement team is working aggressively to secure an endowed chair for the Integrated Wood concentration; gift to augment existing budget to create competitive.

1. Provide additional program information if requested by ADHE staff.

President/Chancellor Approval Date: March 14, 2019

Board of Trustees Notification Date: May 23, 2019

Chief Academic Officer: James S. Coleman Date: March 4, 2019