New Program Proposal

B.S. in Web Development as an evolution of the Digital Information Design (DIFD)

[CIP Code: 11.0801]

Winthrop University [Site Code: Online Degree Program (85750]

A. SUMMARY

Winthrop University is proposing the B.S. in Web Development as an evolution of the Digital Information Design (DIFD) program. While the DIFD program was originally designed as a multi-disciplinary degree encompassing a wide range of digital creative disciplines, it gradually evolved to place a greater emphasis on web application and site development over the years. The B.S. in Digital Information Design will be phased out as current students complete their program. Current BS in DIFD students will likely complete the existing program. This modification of the DIFD program is proposed as a new program because Winthrop is requesting a new CIP code.

Students will have an opportunity to declare a clear career path in creating, developing, and maintaining web applications and sites. Winthrop University offers other technology-focused programs, including Computer Science, Computer Information Systems, and Cyber Security courses that could directly benefit the major or serve as elective options for interested students.

The program requires 120 credit hours for the degree completion with 35-44 general education courses and 31.5 Web development core courses. Students will choose 1 of 4 minors which will equate to 15.5-22 credit hours: Minor in Marketing 15.5 credit hours; Minor in Mass Communication and New Media 18 credit hours; Minor in Visual Design Studies 18 credit hours; Minor in Web Applications 22 credit hours. A total of 20.5-38 electives are also built into the program pathway. The program modality is traditional face to face beginning Fall 2024.

Three new courses were developed to update the original DIFD program. It should be noted that these courses will serve multiple programs at Winthrop as the content provided is important for multiple majors:

CSCI 147 - Practical Website Creation 3 credits

This course introduces students to the fundamentals of web design and development, with a focus on popular Content Management Systems (CMS) and related services. Students will learn how to create and manage websites using CMS platforms such as WordPress, Wix, and Squarespace, as well as how to optimize their websites for search engines and select appropriate domain names. Prerequisite: DIFD/WBDV141

CSCI 245 - Front End Web Development 3 credits

This course introduces students to front end web development, with a focus on popular frameworks that are widely used in the industry. Students will learn how to use CSS and JavaScript frameworks to create responsive layouts, animations, and transitions, and how to apply UI design principles to create engaging and user-friendly websites. Prerequisite: DIFD/WBDV141

CSCI 346 - Human-Computer Interaction 3 credits

This course provides an introduction to the field of Human-Computer Interaction (HCI) and focuses on the design of interactive systems that are effective, efficient, and satisfying for users. The course covers the perceptual, cognitive, and social characteristics of people that inform the creation of computing systems, as well as methods for learning more about people and their use of these systems. The course emphasizes the development/design process, methods of design, and ways to evaluate and improve a design. A balance of design, sociological/psychological, and information systems elements is integrated throughout the course. Prerequisite: Junior status or permission of the coordinator or department chair.

Web Development is an established field with readily available government employment data. Organizations like SC Works and the US Bureau of Labor Statistics (BLS) track various job titles related to web development, such as web/website developer, full-stack developer, front-end/back-end developer, and senior developer. According to SC Works, as of November 2023, there were 99 job openings in South Carolina with the title 'Web Developer.
Graduates from the proposed program would be well suited for many positions, such as:

- UI/UX Designer
- Mobile App Developer
- DevOps Engineer
- Technical Writer
- Digital Marketing Specialist
- E-Learning Developer
- Content Management System (CMS) Developer

REACH Act: All Winthrop University undergraduate degree programs require completion of one course that meets the Founding Documents requirement in the required General Education program. This requirement is met by completing one course from this list: ECON103, HIST211, 212, PLSC201, 309, or 356.

B. UNIVERSITY STUDENT AND PROGRAM DATA, Semester Year

Graduate in-state/out-of-State Enrollment, Fall 2023	(88%)/(11%)

C. INSTITUTIONAL APPROVALS AND DATES OF APPROVAL (include department through Provost/Chief Academic Officer, President, and Board of Trustees approval):

Department of Computer Science and Quantitative Methods	09/05/2023
College of Business Administration Curriculum Committee	09/13/2023
College of Business Administration Faculty Assembly	09/14//2023
Dean, College of Business Administration	09/14/2023
University Committee on Undergraduate Curriculum	09/17/2023
University Academic Council	09/24/2023
University Faculty Conference	09/29/2023
Provost	
01/29/2024	

President 01/30/2024

Winthrop Board of Trustees March 13,

2024

D. SIMILAR PROGRAMS IN SOUTH CAROLINA – PUBLIC AND PRIVATE INSTITUTIONS

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
B.S. in Graphic Communications	120	Clemson University	Holistic approach to preparing students for in-demand careers	Our program does not have a heavy focus on graphics or business.
B.A. Digital Culture and Design	120	Coastal Carolina University	Creation of digital media and content	Winthrop program targets the development of web resources
B.A. Computing in the Arts, Digital Media Concentration	122	College of Charleston	Web dev and HCI courses are part of the program.	Our program has less of a focus on Arts and programming
B.S. Digital Media Production	120	Lander University	Both degrees create digital media	Lander's program is much more focused on media creation. Our program uses media creation as a part of the bigger picture.
B.A. Studio Arts: Digital Media	121	South Carolina State University	Both contain digital media and web design type courses	Winthrop program goes more in depth on web app development
B.B.J.M.C Visual Communications	120	USC Columbia	The development of media content	Our program has less focus on mass media and journalism

B.A. Communication: Digital Media	120	Anderson University	Both degrees prepare for employment in web content creation	The Anderson program is heavy on video production
B.S. Coding: App Development	120	Anderson University	Anderson requires three web courses in the program.	Anderson is very heavy on the CS side (over 30 hours of CS type courses)
B.S. Computer Information Sciences	120	Columbia College	Columbia's program touches on web dev and databases.	Columbia's degree is broader in scope where Winthrop's is focused on web.

E. ENROLLMENT PROJECTIONS

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2024-2025	55	55	0
2025 -2026	65	65	0
2026-2027	80	80	0
2027-2028	95	95	0
2028-2029	95	95	0

The current DIFD program experiences an enrollment around 50 students per semester. With the new name (i.e., Web Development), we expect the marketing of the program to be more successful. With this in mind, we would expect the enrollment to increase by 5 students in the first year. The second year we expect to add 10 more students. By the third year we expect to have entering freshmen classes of about 15 to 20 students each fall. By the third year we also expect to have attrition of about 5 students a year, similar to most computing degree programs.

We expect the program to grow to about 95 students. This would give the proposed Web Development program about half the enrollment of Winthrop's traditional computer science degree.

We list summer headcounts as zero because Winthrop traditionally offers fewer courses in summer semesters. Summer is when Web Development students should be working as interns to build their resumes.

F. INDUSTRY-RELATED OCCUPATIONAL WAGES AND PROJECTIONS IN SOUTH CAROLINA

Occupation	State		National		Data Type and Source
	Expected Number of Jobs	Employment Projection	Expected Number of Jobs	Employment Projection	
Web Developers and Digital Interface Designers	2,210 jobs in 2030	18.8% increase from 2020 to 2030	251,300 jobs in 2032	16% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Computer and Information Systems Managers	4,338 jobs in 2030	15.0% increase from 2020 to 2030	643,300 jobs in 2032	15% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Database Administrators and Architects	1,248 jobs in 2030	11.7% increase from 2020 to 2030	161,600 jobs in 2032	8% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Graphic Designers	2805 jobs in 2030	7.5 % increase from 2020 to 2030	279,800 jobs in 2032	3% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Software Developers, Quality Assurance	12,224 jobs in 2030	30.8% increase from 2020 to 2030	2,246,500 jobs in 2032	25% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook

Analysts, and Testers					

Supporting Evidence of Anticipated Employment Opportunities

It should be noted that the current DIFD program tracks graduate employment. To that end, over the past four years 81.5% of DIFD graduates secured DIFD related careers within 6 months of graduation. In addition, 100% of employment seeking graduates were able to secure employment within 6 months of graduation.

Career and employment websites provide valuable insights into the demand for web developers. A search on Indeed.com conducted on November 2, 2023, for 'web developer' positions in South Carolina revealed 102 open positions. These opportunities span across a range of industries, including education institutions, financial firms, technology companies, and government agencies, and are distributed throughout South Carolina.

Web Development is an established field with readily available government employment data. Organizations like SC Works and the US Bureau of Labor Statistics (BLS) track various job titles related to web development, such as web/website developer, full-stack developer, front-end/back-end developer, and senior developer. According to SC Works, as of November 2023, there were 99 job openings in South Carolina with the title 'Web Developer.

Other than careers as “Web Developers”, the skills and knowledge gained in web development are transferable to numerous fields in today's technology-driven world. Graduates from the proposed program would be well suited for many positions, such as:

- UI/UX Designer

- Mobile App Developer
- DevOps Engineer
- Technical Writer
- Digital Marketing Specialist
- E-Learning Developer
- Content Management System (CMS) Developer

G. CHE STAFF STAGES OF CONSIDERATION

Considerations	Date	Comments
Program proposal received	1.31.2024	Original Proposal received via email. Assigned lead reviewer and second reader
Summary of staff comments, responses, and versions	2.12.2024 3.14.2024	Two Revision request included: • REACH Act inclusion • Board of Trustee Approval • Clarification of Degree Name Change • Workforce Support Documentation • BS in Digital Information current majors • Clarify program level • Correct CIP code
ACAP Considerations		ACAP questions: None Responses: None

		Vote: Approved
CAAL Considerations (See attached commissioner questions and responses)		CAAL questions Responses Vote
CHE Considerations		CHE questions Responses Vote
Submission to IT for addition to inventory		Date completed

H. STAFF, ACAP, CAAL AND CHE RECOMMENDATIONS

a. STAFF RECOMMENDED ACTION

Recommended

b. ACAP RECOMMENDATION

Approved

c. CAAL RECOMMENDATION

Choose an item.

d. CHE RECOMMENDATION

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

Choose an item.

Additional Comments:

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

NEW PROGRAM PROPOSAL FORM

Name of Institution: Winthrop University

Name of Program (include degree designation and all concentrations, options, or tracks):
Bachelor of Science in Web Development. This proposal is a request to modify, rename and assign a new CIP code to the existing BS in Digital Information Design, with concentrations in Digital Commerce, Digital Mass Media, Interactive Media, and Web Application Development.

Program Designation:

- ☐ Associate's Degree
- ☐ Master's Degree
- **XX** Bachelor's Degree: 4 Year
- ☐ Specialist
- ☐ Bachelor's Degree: 5 Year
- ☐ Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA)
- ☐ Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.)

Consider the program for supplemental Palmetto Fellows and LIFE Scholarship awards?

- **XX** Yes
- ☐ No

Proposed Date of Implementation: Fall 2024

CIP Code: 11.0801 Web Page, Digital/Multimedia and Information Resources Design. (Requesting a change from 52.0208)

Delivery Site(s): Winthrop campus - Site Code: 51801

Delivery Mode:

- **XX** Traditional/face-to-face
  *select if less than 25% online
- ☐ Distance Education
  - ☐ 100% online
  - ☐ Blended/hybrid (50% or more online)
  - ☐ Blended/hybrid (25-49% online)
  - ☐ Other distance education (explain if selected)

Program Contact Information (name, title, telephone number, and email address):

Michael Whitney, PhD
Program Director, Digital Information Design
Associate Professor, Computer and Information Sciences
433 Thurmond Building
Winthrop University
Rock Hill, SC 29733
803-323-2688
whitneym@winthrop.edu

All Winthrop University undergraduate degree programs require completion of one course that meets the Founding Documents requirement in the General Education program. This requirement is met by completing one course from this list: ECON103, HIST211, 212, PLSC201, 309, or 356.

Institutional Approvals and Dates of Approval (include department through Provost/Chief Academic Officer, President, and Board of Trustees approval):

Department of Computer Science and Quantitative Methods	**09/05/2023**
College of Business Administration Curriculum Committee	**09/13/2023**
College of Business Administration Faculty Assembly	**09/14//2023**
Dean, College of Business Administration	**09/14/2023**
University Committee on Undergraduate Curriculum	**09/17/2023**
University Academic Council	**09/24/2023**
University Faculty Conference	**09/29/2023**
Provost	**01/29/2024**
President	**01/30/2024**
Winthrop Board of Trustees	**March 13, 2024**

Background Information

State the nature and purpose of the proposed program, including target audience, centrality to institutional mission, and relation to the strategic plan.

Winthrop University is proposing the B.S. in Web Development as an evolution of the Digital Information Design (DIFD) program. While the DIFD program was originally designed as a multi-disciplinary degree encompassing a wide range of digital creative disciplines, it gradually evolved to place a greater emphasis on web application and site development over the years. The B.S. in Digital Information Design will be phased out as current students complete their program. Current BS in DIFD students will likely complete the existing program. Those currently in the first year of the DIFD program can update to the new program if they are interested. This modification of the DIFD program is proposed as a new program because Winthrop is requesting a new CIP code. The primary audience for the Web Development degree remains traditional students who enter directly from high school with a clear career path in creating, developing, and maintaining web applications and sites. The program would have a peripheral impact on Winthrop's other technology-focused programs, including Computer Science, Computer Information Systems, and Cyber Security, offering new courses that could directly benefit the major or serve as elective options for interested students.

The current Digital Information Design program has four concentrations: Digital Commerce, Digital Mass Media, Interactive Media, and Web Application Development. The updated program will require students complete one of four recommended minors to help focus their knowledge. The four choices are Marketing, Mass Communication and New Media, Visual Design Studies, and Web Applications.

Winthrop's mission aims to have students acquire and develop knowledge, skills, capabilities, and values that enrich their lives and prepare them to meet the needs and challenges of the contemporary world. One of the significant challenges in today's world is the demand for a diverse and skilled web development workforce. The B.S. in Web Development aligns with Winthrop's strategic plan in multiple ways. Firstly, it supports the university's target to achieve an undergraduate enrollment of 7,000

students by 2025. Additionally, it addresses the growing demand for web development professionals, ensuring high undergraduate placement rates. Winthrop's strategic plan underscores the importance of enriching the academic program mix by introducing new and innovative programs to achieve these objectives.

Assessment of Need

Provide an assessment of the need for the program for the institution, the state, the region, and beyond, if applicable.

There is a shortage of web application development talent in both industry and government. Winthrop is uniquely positioned both educationally and geographically to meet these needs. In, 2017 IT-oLogy in cooperation with the SC Coordinating Council on Workforce Development, and the SC Department of Commerce issued a report on the state of South Carolina's IT workforce challenges and opportunities [1]. In it they discuss the major concerns related to the supply of workers for the field. One such concern is the number of students pursuing web development degrees will not meet the projected industry needs in 2024. More so, web developers were ranked #6 among the fastest growing jobs in SC with a projected growth of 26.92%. According to Gray Associates data, student demand is in the 82nd percentile in the SC and Charlotte area and at the 70th percentile nationally. According to the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook, the 2022-32 job outlook will experience a 16% increase with a median pay of $80,730 per year [2]. Similarly, SC Works projects an 18.8% increase in Web Developer jobs in SC between 2020 and 2030 [3]. The B.S. Web Development program addresses this supply issue which should help to contribute to an overall increase in the economic impact that these jobs will have for local, regional, and state governments as well as industry and home impacts.

A study of 500 SC companies from across the state and number of sectors were invited in this 2017 IT Workforce report to participate in a workforce survey [4]. The output of this survey which ultimately included 117 SC companies identified six gaps including the following three: a limited supply of candidates in IT, lack of enough students currently in training, and a lack of diversity. In particular demand was in SC metro areas and the I-77 corridor. Winthrop is uniquely positioned to address all these gaps by increasing the supply of candidates eligible for hire. Winthrop is geographically located in York County, where substantial demand exists, and is just an hour from the Columbia metro region as well as being situated just 25 minutes from downtown Charlotte giving Winthrop students access to a wide variety of local companies. These candidates would be a representation of our student body and our state which are both incredibly diverse, in fact, Winthrop's diversity is representative of SC's demographics.

A quick search in Zip Recruiter in late February 2024 found job listings in York County from Yah, A Day and Zimmerman Company; Allnessinc; Envision Horizons; and LPL Financial. Additional listings in the Charlotte area included the Internal Revenue Service, Charlotte-Mecklenburg Schools, Global Channel Management, and Integrated Resources Inc.

_____

1 - https://www.it-ology.org/wp-content/uploads/2018/08/SC-IT-Workforce-Report-2017.pdf
2 - https://www.bls.gov/ooh/computer-and-information-technology/web-developers.htm

3 - https://jobs.scworks.org
4 - https://www.it-ology.org/wp-content/uploads/2018/08/SC-IT-Workforce-Report-2017.pdf

Transfer and Articulation
Identify any special articulation agreements for the proposed program. Provide the articulation agreement or Memorandum of Agreement/Understanding.

There are no special articulation agreements for the proposed program. However, it is possible that future articulation agreements will be made once the program has become established.

Employment Opportunities

Occupation	State		National		Data Type and Source
	Expected Number of Jobs	Employment Projection	Expected Number of Jobs	Employment Projection	
Web Developers and Digital Interface Designers	2,210 jobs in 2030	18.8% increase from 2020 to 2030	251,300 jobs in 2032	16% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Computer and Information Systems Managers	4,338 jobs in 2030	15.0% increase from 2020 to 2030	643,300 jobs in 2032	15% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Database Administrators and Architects	1,248 jobs in 2030	11.7% increase from 2020 to 2030	161,600 jobs in 2032	8% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Graphic Designers	2805 jobs in 2030	7.5 % increase from 2020 to 2030	279,800 jobs in 2032	3% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook
Software Developers, Quality Assurance Analysts, and Testers	12,224 jobs in 2030	30.8% increase from 2020 to 2030	2,246,500 jobs in 2032	25% increase from 2022 to 2032	SC Works / US BLS Occupational Outlook Handbook

Supporting Evidence of Anticipated Employment Opportunities
Provide supporting evidence of anticipated employment opportunities for graduates.

It should be noted that the current DIFD program tracks graduate employment. To that end, over the past four years 81.5% of DIFD graduates secured DIFD related careers within 6 months of graduation. In addition, 100% of employment seeking graduates were able to secure employment within 6 months of graduation.

Career and employment websites provide valuable insights into the demand for web developers. A search on **Indeed.com** conducted on November 2, 2023, for 'web developer' positions in South Carolina revealed **102 open positions**. These opportunities span across a range of industries, including education

institutions, financial firms, technology companies, and government agencies, and are distributed throughout South Carolina.

Web Development is an established field with readily available government employment data. Organizations like **SC Works** and the **US Bureau of Labor Statistics (BLS)** track various job titles related to web development, such as web/website developer, full-stack developer, front-end/back-end developer, and senior developer. According to **SC Works**, as of November 2023, there were **99** job openings in South Carolina with the title 'Web Developer.

Other than careers as "Web Developers", the skills and knowledge gained in web development are transferable to numerous fields in today's technology-driven world. Graduates from the proposed program would be well suited for many positions, such as:

- UI/UX Designer
- Mobile App Developer
- DevOps Engineer
- Technical Writer
- Digital Marketing Specialist
- E-Learning Developer
- Content Management System (CMS) Developer

Description of the Program

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2024-2025	55	55	0
2025 -2026	65	65	0
2026-2027	80	80	0
2027-2028	95	95	0
2028-2029	95	95	0

Explain how the enrollment projections were calculated.

The current DIFD program experiences an enrollment around 50 students per semester. With the new name (i.e., Web Development), we expect the marketing of the program to be more successful. With this in mind, we would expect the enrollment to increase by 5 students in the first year. The second year we expect to add 10 more students. By the third year we expect to have entering freshmen classes of about 15 to 20 students each fall. By the third year we also expect to have attrition of about 5 students a year, similar to most computing degree programs.

We expect the program to grow to about 95 students. This would give the proposed Web Development program about half the enrollment of Winthrop's traditional computer science degree.

We list summer headcounts as zero because Winthrop traditionally offers fewer courses in summer semesters. Summer is when Web Development students should be working as interns to build their resumes.

Besides the general institutional admission requirements, are there any separate or additional admission requirements for the proposed program? If yes, explain.

☐ Yes

xx No

Curriculum

New Courses
List and provide course descriptions for new courses.

The Web Development degree is an update to the DIFD degree. As such, most of the courses are already in place. The following is a list of new courses that were created to update the original DIFD program. It should be noted that these courses will serve multiple programs at Winthrop as the content provided is important for multiple majors.

CSCI 147 - Practical Website Creation 3 cr
This course introduces students to the fundamentals of web design and development, with a focus on popular Content Management Systems (CMS) and related services. Students will learn how to create and manage websites using CMS platforms such as WordPress, Wix, and Squarespace, as well as how to optimize their websites for search engines and select appropriate domain names. Prereq: DIFD/WBDV141

CSCI 245 - Front End Web Development 3 cr
This course introduces students to front end web development, with a focus on popular frameworks that are widely used in the industry. Students will learn how to use css and JavaScript frameworks to create responsive layouts, animations, and transitions, and how to apply UI design principles to create engaging and user-friendly websites. Prereq: DIFD/WBDV141

CSCI 346 - Human-Computer Interaction 3 cr
This course provides an introduction to the field of Human-Computer Interaction (HCI) and focuses on the design of interactive systems that are effective, efficient, and satisfying for users. The course covers the perceptual, cognitive, and social characteristics of people that inform the creation of computing systems, as well as methods for learning more about people and their use of these systems. The course emphasizes the development/design process, methods of design, and ways to evaluate and improve a

design. A balance of design, sociological/psychological, and information systems elements is integrated throughout the course. Prereq: Junior status or permission of the coordinator or department chair.

Total Credit Hours Required: 120

The new Web Development degree is an update to the current Digital Information Design (DIFD) degree. The DIFD degree has a core set of courses and multiple concentrations. The Web Development degree reflects the DIFD degree by having a similar set of core courses. The DIFD concentrations have been replaced with minors in the same areas. The courses taken for the minors are closely aligned with the courses taken in DIFD's concentrations.

Bachelor of Science in Web Development

General Education Courses		**Semester Hours**
ACAD 101	Principles of the Learning Academy	1
Shared Skills and Proficiencies		
Writing and Critical Thinking (*C- or better is required in each course*)		
WRIT 101, HMXP 102, CRTW 201	Composition: The Human Experience: Who Am I? Critical Reading, Thinking and Writing	9
Oral Communication	Met in major with CSCI 327	0
Technology	Met in major with CSCI 151	0
Intensive Writing	Met in major with CSCI 327	0
Founding Documents Reqmt	See approved list, p. XX; may be met by other req	0-3
Physical Activity	See approved list, p. XX	1
Thinking Critically Across Disciplines*		
Global Perspectives	See approved list, p. XX	3
Historical Perspectives	See approved list, p. XX	3
Introducing Students to Broad Disciplinary Perspectives*		
Social Science	See approved list, p. 16; must include 2 designators	6
Humanities and Arts	See approved list, p. 16; must include 2 designators	6
Quantitative Skills and Natural Sciences* (3 courses)		**6-12**
Quantitative Skills		
MATH 151 or a MATH that includes Calculus or has Calculus as a pre-requisite		(3-4)
Additional Quantitative course	Met in major with QMTH 205	(0)
Natural Science	See approved list, p. 16 [Must include a lab science. If 2 courses taken, must be in 2 different groups: Life, Physical, Earth].	(3-8)
*No more than two courses in the major may count toward requirements in these areas		
Subtotal		**35-44**
Web Development Core		**31.5**
CSCI 101B	Using Microsoft Excel	.5
CSCI 151	Overview of Computer Science	3
CSCI 327	Social Implications of Computing	3
CSCI 346	Human-Computer Interaction	3
MCOM/WBDV 311	Digital Culture and Society	3
MKTG 380	Principles of Marketing	3
QMTH 205	Quantitative Methods in Business	3
DIFD/WBVD 141	Introduction to Web Application Design	4
CSCI/WBDV 147	Practical Website Creation	3
CSCI/WBDV 245	Front End Web Development	3
WBDV 451	Senior Synthesis	3
Choose 1 of 4 minors		**15.5-22**
Minor in Marketing		**(**15.5)
Minor in Mass Communication and New Media		**(**18)
Minor in Visual Design Studies		(18)
Minor in Web Applications		(22)
Electives		20.5-38
Total		**120**

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

Below is an eight-semester curriculum plan with the Web Applications minor.

Curriculum by Year: Web Development					
Course Name	**Credit Hours**	**Course Name**	**Credit Hours**	**Course Name**	**Credit Hours**
Year 1 (* Must be taken in year 1, † part of the core set of courses)					
Fall		**Spring**		**Summer**	
*†CSCI 101B	.5	*†QMTH 205 (quantitative skills)	3		
*†CSCI 151 (technology)	3	*†WBDV 147	3		
*†Math 151 (quantitative skills)	3	*†Nat Science with Lab	4		
*†WBDV 141	4	HMXP 102	3		
ACAD 101	1	CSCI 207 (minor)	4		
WRIT 101	3				
Total Semester Hours	14.5	Total Semester Hours	17	Total Semester Hours	
Year 2					
Fall		**Spring**		**Summer**	
†WBDV 245	3	†MCOM 311	3		
CRTW 201	3	Minor Course	3		
Minor Course	3	Founding Documents course (REACH)	3		
Minor Course	3	Elective	3		
GenEd (Humanities and Arts)	3	Elective	2		
Elective	.5				
Total Semester Hours	15.5	Total Semester Hours	14	Total Semester Hours	

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
Year 3					
Fall		**Spring**		**Summer**	
† CSCI 346	3	† CSCI 327	3		
† MKTG 380	3	Minor Course	3		
Minor Course	3	Gen Ed (Historical)	3		
Elective	3	PESH	1		
Elective	3	Elective	3		
		Elective	2		
Total Semester Hours	15	Total Semester Hours	15	Total Semester Hours	
Year 4					
Fall		**Spring**		**Summer**	
GenEd (Global)	3	†WBDV 451	3		
Gen Ed (Social Science)	3	Gen Ed (Social Science)	3		
GenEd (Humanities and Arts)	3	Elective	3		
Elective	3	Elective	3		
Elective	3	Elective	3		
Total Semester Hours	15	Total Semester Hours	15	Total Semester Hours	

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

Similar Programs in South Carolina offered by Public and Independent Institutions
Identify the similar programs offered and describe the similarities and differences for each program.

According to South Carolina Commission on Higher Education's inventory of academic programs (as of February 17, 2023), no Public or Independent Institution offers a degree that uses the 11.0801 CIP code (Web Page, Digital/Multimedia and Information Resources Design degree). As no direct match could be found, the following is a list of programs that cover similar web development content.

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
B.S. in Graphic Communications	120	Clemson University	Holistic approach to preparing students for in-demand careers	Our program does not have a heavy focus on graphics or business.
B.A. Digital Culture and Design	120	Coastal Carolina University	Creation of digital media and content	Winthrop program targets the development of web resources
B.A. Computing in the Arts, Digital Media Concentration	122	College of Charleston	Web dev and HCI courses are part of the program.	Our program has less of a focus on Arts and programming
B.S. Digital Media Production	120	Lander University	Both degrees create digital media	Lander's program is much more focused on media creation. Our program uses media creation as a part of the bigger picture.
B.A. Studio Arts: Digital Media	121	South Carolina State University	Both contain digital media and web design type courses	Winthrop program goes more in depth on web app development
B.B.J.M.C Visual Communications	120	USC Columbia	The development of media content	Our program has less focus on mass media and journalism
B.A. Communication: Digital Media	120	Anderson University	Both degrees prepare for employment in web content creation	The Anderson program is heavy on video production
B.S. Coding: App Development	120	Anderson University	Anderson requires three web courses in the program.	Anderson is very heavy on the CS side (over 30 hours of CS type courses)
B.S. Computer Information Sciences	120	Columbia College	Columbia's program touches on web dev and databases.	Columbia's degree is broader in scope where Winthrop's is focused on web.

Faculty

Rank and Full- or Part-time	Courses Taught for the Program	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Relevant Professional Experience (e.g., licensures, certifications, years in industry, etc.)
Associate Professor, full-time	CSCI 346 Human-Computer Interaction WEBD 451: Senior Synthesis	PhD Information Technology UNC - Charlotte 2013	7 years in higher education; Several years of part-time work in IT, Intern with Google Security Team
Associate Professor & Dept Chair, full-time	CSCI 327 Social Implications of Computing	PhD Computer Sci & Engineering Auburn University 1995	25 years in higher education
Associate Professor; Digital Information Design, Program Director; full-time	CSCI 151 Overview of Computer Science WEBD 141 Introduction to Web Application Design WEBD 147 Practical Website Creation WEBD 245: Front End Web Dev	PhD Computing and Info Systems UNC - Charlotte PhD Education Administration Southern Illinois-Carbondale	18 years in higher education, plus multiple temporary positions as a researcher in industry
Instructor, full-time	CSCI 101B	Master of Science, Electrical Engineering, Massachusetts Institute of Technology, 1980	17 years in higher education, plus 26 years in industry
Associate Professor, full-time	MCOM 311	Ph.D., Mass Communication, University of South Carolina	12 years in higher education 15 years of experience in radio and television broadcasting
Professor, full-time	MKTG 380	Ph.D., Southern Illinois University-Carbondale	19 years in higher education
Assistant Professor, full-time	QMTH 205	Ph.D., University of Tennessee, Knoxville	9 years in higher education

Total FTE needed to support the proposed program:

Faculty: 1.3
Staff: 0.20
Administration: 0.20

Faculty, Staff, and Administrative Personnel
Discuss the Faculty, Staff, and Administrative Personnel needs of the program.

Faculty: The proposed Web Development degree is a modification to the existing Digital Information Design (DIFD) degree. As much as possible, the proposed degree uses existing courses that are part of the DIFD and other degree programs and minors. The CS Department currently supports four other degree programs:

- BS in Computer Science - CAC/ABET accredited
- Computer Information Systems concentration of the BS in Business degree - AACSB accredited
- BS in Applied Software Development - very recently approved program for students that hold an Associate's Degree
- BS in Cybersecurity

The faculty are well accustomed to offering coursework in support of a variety of programs. The CS faculty are also accustomed to working with faculty in other departments. The CS program has a good relationship with the faculty representing the minor as established through the interdisciplinary DIFD degree.

The CS Department will not need to hire additional at this time as the faculty that are currently teaching DIFD courses will continue to do so with the updated Web Development degree.

Resources

Library and Learning Resources
Explain how current library/learning collections, databases, resources, and services specific to the discipline, including those provided by PASCAL, can support the proposed program. Identify additional library resources needed.

The Ida Jane Dacus Library is an integral part of the university's instructional program. The primary goal of the Winthrop University Library is to support the instructional and research activities of the Winthrop University academic community. The Winthrop Library is the primary provider on campus of scholarly information in all forms from print to electronic. In affirming its belief in the mission and goals of the university, the library is pledged to provide the information quickly, efficiently, and in sufficient depth to promote the excellence of all academic programs offered by the university.

In addition to the traditional reference assistance available in Dacus, material can be requested from other institutions through interlibrary loan. The Library is constantly reviewing and upgrading its resources, especially the electronic indexes and databases, which are upgraded frequently. New courses and programs, accreditation standards as well as courses dropped from the curriculum are reviewed. A portion of the library's annual book budget is allocated to the Computer Science department for the purpose of purchasing books and instructional audio-visual materials. The department selects a person

to serve in the capacity of departmental liaison. The liaison's responsibility is to monitor departmental expenditures and make sure the teaching and research needs of the university are being supported. Departmental faculty are encouraged to submit requests for needed material.

Student Support Services
Explain how current academic support services will support the proposed program. Identify new services needed and provide any estimated costs associated with these services.

All new students are required to participate in orientation. A primary topic of orientation is coursework, including general education and degree requirements. Before a computing student takes his/her/their first course at Winthrop, they have met with a CS faculty member about their first semester's coursework. All existing Winthrop students are assigned a faculty advisor. Students must meet with their faculty advisor before they are allowed to sign up for the next semester's classes (The registration system locks out a student until their advisor lifts the student's advising flag). Therefore, all students must meet with their faculty advisor at least once a semester. All faculty members have student advisees. Effectiveness of advising is a specific item on the faculty annual report and the annual faculty performance evaluation. If a student has a question about coursework at any time throughout the semester, they can go see their advisor, the department chair, or any CS faculty member. All faculty maintain at least 8 hours of Office Hours each week.

Students may also go to the college's Student Services Office to ask that staff questions during regular working hours. That office has two full-time advisors with another FTE of Graduate Assistant advisors. That system advises over 900 students in the college, so a few more students for the proposed program will not impact academic support effectiveness.

Physical Resources/Facilities
Identify the physical facilities needed to support the program and the institution’s plan for meeting the requirements.

Winthrop is a laptop campus and software needed for the degree can run on a student’s laptop. In addition, students also have access to multiple computer labs across campus. Labs specifically available to students enrolled in the program’s core courses include: Thurmond 114, Thurmond 115, and Carroll 215 are exclusively reserved for computing majors. These students use their university ID card to access these labs. No instruction is scheduled in these labs - they are for students to use when the students want to use them. These rooms contain approximately 20 Linux machines, a few Windows machines, a student-built 32-node Beowulf cluster, networking equipment (switches and a router), and a large monitor for group work. Equipment is managed centrally by the university’s Division of Computing and Information Technology, which has 23 FTE employees. Course fees on upper-division CSCI courses are used to purchase specialized equipment, such as computer workstations with extra memory and graphics cards as new technology or replacements are needed.

Equipment
Identify new instructional equipment needed for the proposed program.

As the proposed Web Development degree is an update to the existing Digital Information Design Degree, new equipment is not needed other than normal technology refreshing or when new technology is available. Current course fees are generally enough to cover these costs. More so, the equipment that is used for the current degree is appropriate for the proposed degree.

Impact on Existing Programs

Will the proposed program impact existing degree programs or services at the institution (e.g., course offerings or enrollment)? If yes, explain.

☐ Yes

XX No

In general, the anticipated effect of the proposed program won't deviate significantly from the current DIFD program's influence. By considering DIFD's present impact as an indicator of the proposed program's potential, there might be some minor, yet observable shifts in existing programs. First, students majoring in technology, mass media, design, or marketing focused majors might choose to leave the degree for this Web Development degree. The numbers who change majors are not expected to be large enough to warrant concern. Second, we expect an overall net gain of students to the institution through new recruitment. Not all of these students will stay majors in the Web Development program and there may be attrition to the other technology focused programs or the university programs as a whole.

Meeting: CAAL Meeting
Meeting Date: May 9, 2024
Agenda Item: 5J

Financial Support

Sources of Financing for the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Tuition Funding	841830	841830	153060	994890	229590	1224480	229590	145070		145070		5969340
Course Fees	8250	8250	1500	9750	2250	12000	2250	14250		14250		58500
Special State Appropriation												
Reallocation of Existing Funds												
Federal, Grant, or Other Funding												
Total	850080	850080		1004640		1236480		1468320		1468320		6027840
Estimated Costs Associated with Implementing the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Program Administration and Faculty/Staff Salaries		250000		257500		265225		273182		281377		1327284
Facilities, Equipment, Supplies, and Materials	8250	8250	1500	9750	2250	12000	2250	14250		14250	14250	58500
Library Resources												
Other (Overhead)	336732	336732	61224	397956	91836	489792	91836	581628		581628	581448	2387736
Total	344802	595482	62724	665706	94086	468713	94086	869810		878005	595698	3776770
Net Total (Sources of Financing Minus Estimated Costs)	504828	254598	91836	338934	137754	468713	137754	598510		590315	872172	2251070

Note: New costs - costs incurred solely as a result of implementing this program. Total costs - new costs; program's share of costs of existing resources used to support the program; and any other costs redirected to the program.

Budget Justification

Provide an explanation for all costs and sources of financing identified in the Financial Support table. Include an analysis of cost-effectiveness and return on investment and address any impacts to tuition, other programs, services, facilities, and the institution overall.

Since the BS in Web Development is a modification and renaming of the existing BS in Digital Information Design, there are no plans for new faculty, new facilities or other significant new expenses. We do anticipate new interest in the program, and an increase in student enrollment from the current 50-55 students up to an estimated 95 students. The new revenue is the anticipated additional tuition and fee revenue for these new students. The first year is the revenue from all in the updated program. Year 2 through 5 is the increased annual tuition for the new students each year. The fees collected are the existing or proposed new course fees for the classes in the program. These fees are collected to help pay for software licensing, equipment maintenance, repair, and as needed, replacement.

Since existing faculty are moving from the BS in Digital Information Design, there are no new faculty, so faculty costs remain in the totals. This salary line represents the portion of faculty salaries that go toward this program. Computer Science faculty teach across 4 other programs (BS in Computer Science, BS in Business Administration with concentration in Computing Information Systems, BS in Cybersecurity, and BS in Applied Software Development, as well as in a few general education courses and courses used in other degree programs.

The institutional overhead is calculated at 40% of the tuition revenue and covers facilities, utilities, and institutional processes and staffing. This is an average used for these calculations, based on our standard overhead charges used for grant purposes.

Evaluation and Assessment

Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
Graduates will be proficient in the creation of responsive and visually appealing web interfaces	Students will be able to develop responsive and visually appealing web interfaces using HTML, CSS, and JavaScript.	WEBD 245 Project
	Students will understand the importance of user-centered design, integrating user feedback and usability testing to enhance the user experience of their web designs.	CSCI 346 Project
Graduates will be able to demonstrate an understanding of integrated marketing strategies	Students will understand online audience analysis practices and how they relate to the development of web content.	MCOM/WEBD 311 Assignments
	Students will be capable of designing, planning, and executing integrated marketing campaigns that leverage various digital channels, including SEO, social media, content marketing, and email marketing.	MKTG 380 Exams

Graduates will coordinate and manage projects that involve web development, marketing, design, and communication components.	Each student can function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	WEBD 451 Faculty evaluation
Graduates will be able to communicate ideas and concepts effectively.	Students will communicate effectively in oral form.	CSCI 327 Research presentation
	Students will communicate effectively in written form.	CSCI 327 Research presentation

Explain how the proposed program, including all program objectives, will be evaluated, along with plans to track employment. Describe how assessment data will be used.

Assessment and continuous improvement are built into every aspect of the current Digital Information Design program which is being replaced by the proposed Web Development program. It is standard practice for faculty to gather assessment data. Each fall the faculty review the previous year's data to determine what curriculum improvements are needed. Part of the Annual Evaluation of faculty is their participation in the program evaluation process. Graduating seniors are surveyed for their opinions, suggestions for program improvement, and information on their employment status. Additionally, the department has an industry advising board who provide input into the degrees' curriculum. Those long established assessment and program improvement processes will be employed for the proposed program.

Assessment Overview
Winthrop University executes an outcome-based programmatic assessment effort that allows for continuous improvement of academic programs, to include student learning outcomes. Part of a cyclical process, these assessment efforts are designed to determine the extent to which identified outcomes are met and findings used for continuous improvement efforts. The process of identifying outcomes, collecting and analyzing data, and using results for improvement of the academic programs support the assessment of the University's overall institutional effectiveness. The institution functions on the premise that assessment of academic programs maintains and strengthens the programs, while allowing the institution to achieve its stated outcomes.

Two goals of The Winthrop Plan, the University's strategic plan, are supported by the assessment of academic programs; specifically to "support inclusive excellence by expanding our impact on students" and to "continually enhance the quality of the Winthrop experience for all students." The process of student learning assessment, although focused at the program level, is informed by University structures and expectations.

Outcomes of individual academic programs are assessed through three major processes: (1) student learning outcomes assessment, focusing on what students know, think, and can do as a result of completing a program, (2) academic program review, a comprehensive evaluation of all areas of an academic program, including curriculum, faculty, students, and resources, and (3) professional accreditation review for specific disciplines. Assessment findings inform programmatic decisions, document student achievement, and improve the quality of learning for all students. The academic review system focuses on developing an institutional culture, with continual improvement at the core of assessment work.

Student Learning Outcome Assessment
Each academic program, within Winthrop University's four degree-granting colleges, is required to implement an annual assessment plan that clearly articulates student learning outcomes and program outcomes, identifies

appropriate methodology, measures the extent to which students achieve the outcomes, analyzes the findings, and uses the results to make curricular and programmatic enhancements or adjustments.

Accreditation and Licensure/Certification

Will the institution seek program-specific accreditation (e.g., CAEP, ABET, NASM, etc.)? If yes, describe the institution's plans to seek accreditation, including the expected timeline.

☐Yes

XX No

Will the proposed program lead to licensure or certification? If yes, identify the licensure or certification.

☐Yes

XX No

Explain how the program will prepare students for this licensure or certification.

If the program is an Educator Preparation Program, does the proposed certification area require national recognition from a Specialized Professional Association (SPA)? If yes, describe the institution's plans to seek national recognition, including the expected timeline.

☐Yes

XX No