

**LAIJU: TOUGALOO COLLEGE
DHS COASTAL RESILIENCE CENTER
EDUCATION PROJECT
FINAL/YEAR 3 REPORTS (1/1/2016 – 6/30/18)**

Project Title: Institutionalization, Expansion, and Enhancement of Interdisciplinary Minor: Disaster and Coastal Studies

Principal Investigator / Institution: Meherun Laiju, Ph. D. Associate Professor and Chair, Sociology Department; Tougaloo College

Other Education Participants/Partners: Interdisciplinary collaboration within Tougaloo College (Mass-Communication, Physics, Political Science, Psychology, and Sociology, Department’s faculty members)

Project Start and End Dates: January 1, 2016 – June 30, 2018

Short Project Description (“elevator speech”):

To diversify the Department of Homeland Security’s (DHS) workforce and help Tougaloo College’s new career pathway curriculum, the current project took several initiatives to institutionalize an Interdisciplinary Minor Disaster Coastal Studies (DCS), established under the auspice of Department of Homeland Security’s Coastal Hazards Center. Initiatives, such as course modification, collaboration with other departments, and a multidisciplinary professional certificate program at the undergraduate level were developed. This certificate program has been approved to be launched for Fall 2018. Also, to strengthen community resilience during natural and man-made disasters, the project undertook Neighborhood Outreach initiatives and, in collaboration with Mississippi Emergency Management Agency (MEMA), conducted neighborhood training to train first responders.

PROJECT NARRATIVE:

1. Introduction and project overview:

The education project, Interdisciplinary Minor: Disaster Coastal Studies (DCS), addresses the acute underrepresentation of minorities in the Science, Technology, Engineering, and Mathematics areas (STEM). The project goal is to diversify the future DHS and S&T related workforce by training underrepresented minorities, mirroring some of the more vulnerable population impacted by disaster scenarios. The DCS curriculum allows students to develop skills and knowledge and provides an opportunity to be trained in interdisciplinary fields across academic divisions (Natural & Social Science). The curriculum helps create a pipeline of underrepresented minority students with interdisciplinary skills, incorporating a Social Science focus that is marketable in the field of disaster and emergency planning, management, response, and recovery. In addition to coursework that addresses the legal, economic, and public health aspects of natural disasters, practical skills—such as student internships with emergency management agencies, Geographical Information System (GIS) training, and FEMA’s Independent Study (IS) training—are incorporated into the coursework. The Project also

provides students the opportunity to participate in faculty lead research in the field of community preparedness to enhance community resilience. Students present their research findings in the field of disaster preparedness and recovery at the annual, yearend symposium—attended by various stakeholders including students, faculty, staff, administration, program partners, homeland security related organizations, and community members. Additionally, the pilot program neighborhood outreach initiative, in collaboration with MEMA, offered opportunities for community leaders and interested citizens to be trained as first responders. The neighborhood training initiative addresses Homeland Security’s Post–Katrina Emergency Reform Act of 2006—building resilient communities as a part of national preparedness.

2. History:

This project took initiatives to institutionalize, expand, and enhance the Interdisciplinary Minor: Disaster and Coastal Studies implemented during the Coastal Hazards Center of Excellence-Education (2008-2015). The minor consisted of six courses, including forty (40) hours of field placement (internship) with local, state, federal, and NGO’S which deal with emergency management. Faculty members from Sociology, Psychology, Physics, Political Science departments, and the Jackson Heart Study collaborated to teach and modify courses, which includes adding GIS component and FEMA’s Independent Study (IS) Training. The minor provides students an opportunity to be trained in interdisciplinary fields across academic divisions (Natural Science and Social Science), which is uncommon in small historically black colleges. Students pursuing the minor also participate in faculty lead research in the field of community preparedness to enhance community resilience. Students receive training in the critical needs area through education, participating in research and field experience by completing an internship with local emergency management agencies. The exposure helps students acquire highly portable skills necessary to succeed in high impact careers, thus creating a more diverse future workforce. Furthermore, the project addresses the acute underrepresentation of African American minorities in the Science, Technology, Engineering and Mathematics (STEM) areas. During the Spring 2016 academic session, an advisory committee was put together. The committee members assisted in the designing the credit-bearing, multidisciplinary certificate program and neighborhood training. The objective of the certificate program is to diversify and develop a skilled workforce for DHS, national, and local emergency management agencies. The committee members met at least once a semester—most correspondence and meetings being conducted by email and phone. The participants and their roles are included in the following table:

End User	Agency/Employer	Project Role
Dr. Nicole Cathy	Political Science; TC	Coordinator
Dr. George Humphrey, CFM	Director (grants)MEMA	DCS Instructor, Place Intern
Mr. John Brown	Regional Manager; Red Cross	Serve on panel, place Intern
Ms. Loretta Thorpe, MEP	Bureau Director-Training State Training Officer, Office of Preparedness, MEMA	Serve on panel, Place Interns, & neighborhood training coordinator
Mr. Jesse Murphree	Emergency Preparedness Training Officer, MEMA	Conduct the neighborhood training

Ms. Marsha Manuel	Grant Director, MS office of Homeland Security	Serve on panel, Intern placement
Colonel Donnell Berry	MS State Trooper	Serve on panel
Mr. Ricky Moore	Director, Hinds County Emergency Management	Serve on Panel
Mr. Warren D. Miller	President, Mississippi Voluntary Organizations Active in Disaster(VOAD)	Serve on Panel, Intern Placement
Phyllis Parker	Director, Woodhaven Homeowners Association	Serve on Panel
Mr. Anderson	Pastor, United Methodist Church	Serve on Panel
Dr. Shaila Khan	Psychology Department, TC	DCS Instructor &Mentor student research
Dr. Santanu Banerjee	Physics Department, TC	DCS Instructor &Mentor student research

The advisory committee helped design a twelve credit-hour multidisciplinary DCS certification. The curriculum incorporates existing DCS minor courses along with modified elective courses from Psychology, Sociology, Mass-Communication, Political Science, and the Natural Sciences. The minor was approved by the board in spring 2018 and will be rolled-out in fall 2018. The objectives of the DCS certificate is to prepare undergraduates with knowledge and skills to work in the public sector (federal, state, county, or city), private sector, or graduate programs in a variety of fields—including disaster management, public policy, public health, social work etc. The DCS certificate addresses the demand of the United States Department of Homeland Security, local, and state government needs for trained professionals in the area of disaster management, and diversifies the future DHS workforce. The neighborhood outreach initiative in collaboration with Mississippi Emergency Management Agency (MEMA) helps to develop a working relation with the local community. The certificate program also offers opportunities for community leaders and interested citizens to be trained as first responders, which will help in preparing resilient communities. The DCS certificate provides students with a multidisciplinary perspective to show the nature of disasters, organizational issues inherent in management and planning, skills in GIS, and internships with end users. The major challenge encountered by the project has been developing the certificate program. Several times, the delivery method has been changed for the certificate program. Initially, a non-credit bearing certificate program was commenced by the Tougaloo College Continuing Education Program for the community at large. A change of administration (Provost) between Fall 2015 and Spring 2016 led to the administration decision to phase out the continuing Education Department and created a problem for the proposed certificate program. By March 2016, it was decided that the certificate program will be offered by the Sociology Department in collaboration with the Political Science Department. Dr. Nicole Cathy, assistant professor of the Political Science Department, is

assigned as a coordinator. We have contacted the local emergency management agencies and setup an advisory board to assist us in designing the certificate program. Unfortunately, we had to face another unanticipated challenge. In the Fall 2016, the new administration focused on restructuring the general education (common core) curriculum. The new curriculum reduces the general education requirements from 60 to 40 (credits hours) and plans to add professional certifications in different fields—career pathway initiatives. The consensus was professional certificates will provide an option for students who want to join in to workforce immediately after completing their undergraduate degree. We saw this is an opportunity to institutionalize the existing DCS minor within the college curriculum. Using advisory committee members input, collaboration between different departments, and by modifying the minor’s courses, a newly designed multidisciplinary professional certification will be offered in Fall 2018. The professional certifications will prepare students for emergency management related workforce. The change in administration and their new initiatives put us slightly behind schedule to develop and launch the proposed certificate program. The change in administration and their new initiatives put us slightly behind schedule to develop and launch the proposed certificate program. Even though I had to deal with uncertainty but at end these challenges benefitted the outcome of the project.



Outreach Initiatives. Collaboration with MEMA



GIS Training



Students collecting data at Harris County, TX



MEMA personnel teaching class



Jackson Mayor visiting DCS class

3. Results:

The project (January 2016 – June 2018) delivered 15 courses, revised 6 courses, enrolled 139 students, placed 25 research internship, had 27 merit awards, graduated 11 students with Disaster Coastal Study minor, and supported 2 faculty members’ research projects. The offered courses also served as electives towards graduation for many students. 9 students presented at Mississippi Academy of Science (MAS) conferences and 3 (students guided by faculty) abstracts were published in MAS journal. DCS students also participated at TCMC (Tougaloo and Mississippi College) undergraduate research symposium. Each academic year, the project organized Disaster Coastal Studies Research Symposium. In this symposium the guest speaker from UNC- Chapel Hill, and Old Dominion University shared their ongoing research project with the DCS students. 4 students participated in SUMERX program and did the summer internships at University of Delaware Disaster Research Center, University of Rhode Island, and Old Dominion University. Faculty members teaching the minor courses invited experts in the field as guest speakers. The goal was to help students develop an understanding of the relevance of the course in daily settings. To sustain and institutionalize the Interdisciplinary Minor, Disaster Coastal Studies, it was modified and made into a 12 credit hour Multidiscipline, Certificate program Disaster Coastal Studies. The Certificate program received all the necessary approval and will be offered from fall 2018.

DCS Research Group



2018



2017



2016

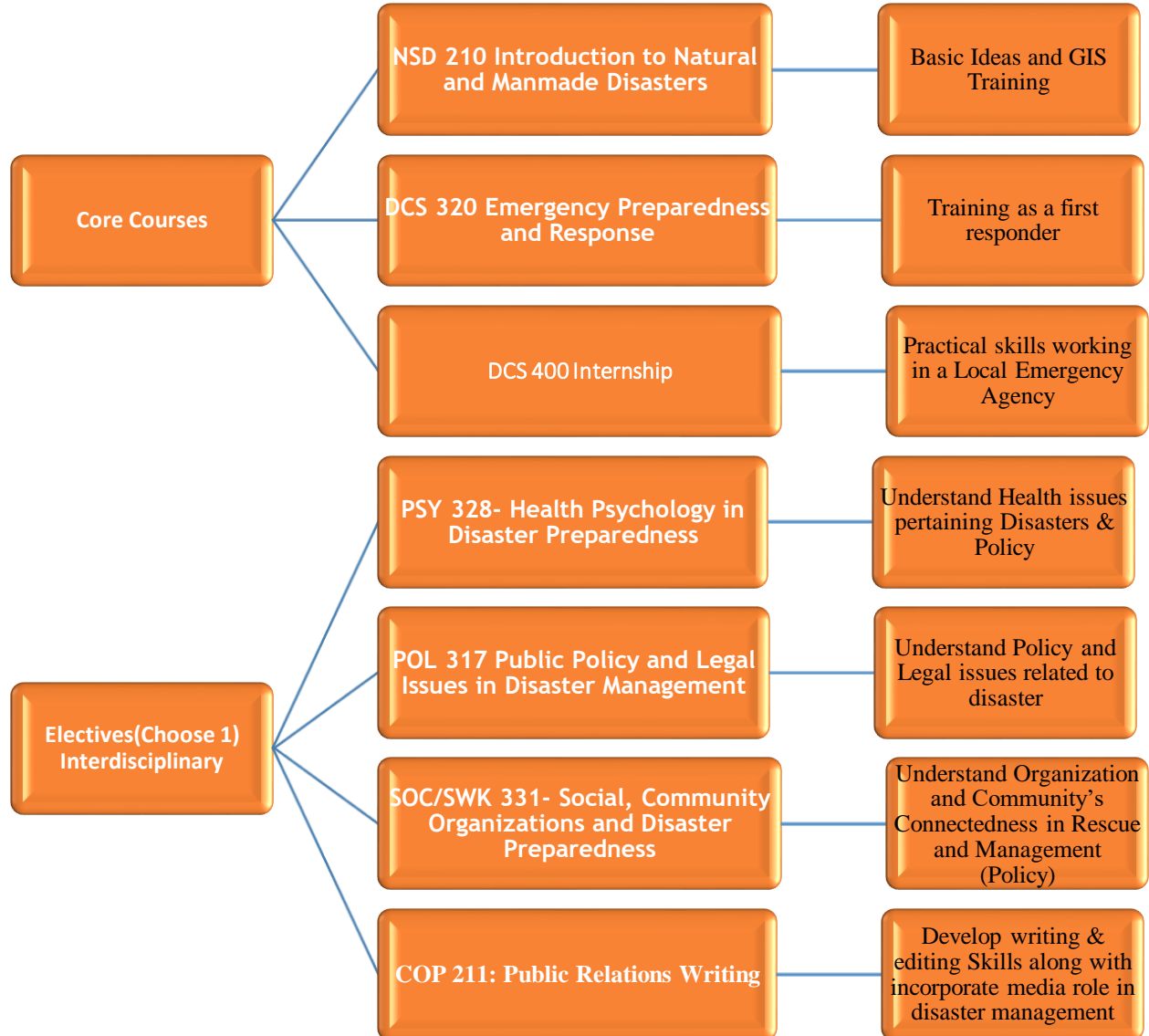
4. Students:

Tougaloo College is a Historically Black undergraduate institution, 99% of the student body is African-American and are full-time students. From January 2016 to June 2018, 11 students graduated with DCS minor—3 males and 8 females. 6 are attending graduate schools, 4 applied for jobs with emergency management agencies, and 1 is working with a VOAD (a voluntary agency).

5. Institutionalization:

To institutionalize the DCS minor, years 1-3 took steps such as collaborating with different disciplines, modifying courses, incorporating elective courses from other disciplines, and designing a curriculum. The new curriculum replaced the DCS minor as a multidisciplinary certificate program. The program will be rolled out in Fall 2018, and is expected to be a self-sustaining program. To make a self-sustaining program, the twelve credit-hour certification curriculum incorporates the existing elective courses from different disciplines (see following table). The three core courses, *DCS 201: Intro to Natural Disaster* course was adopted by the Natural Science and co-listed (NSD 201) as an elective offered by the division. Mississippi Emergency Management Agency (MEMA) personnel currently teach *DCS 320: Emergency Preparedness and Response* as an adjunct faculty. Academic Affairs agreed to pay adjunct salary if the enrollment in the course is 8-10 students after (2020). The same holds true for the Internship course (*DCS 400*). Beginning fall 2018, College will offer Bachelor of Social Work (BSW) as a degree granting program and the DCS certification is included within the BSW degree program as an option of specialization. In the next two years (2018-20), the project will take initiatives such as continuing with the existing end-users, establishing collaboration with FEMA and other private agencies which deal with emergency management, placing interns into private emergency management organizations, inviting personnel to class as field experts, and inviting local public and private emergency management agencies to participate in the Tougaloo College job fair to help DCS graduates' recruitment. I am expecting that these initiatives will help strengthen to sustain the certificate program beyond 2020. The certificate will be part of Tougaloo College's path to career program.

Design of the Certificate Curriculum



6. Interactions with research projects:

The Interdisciplinary Minor: Disaster Coastal Studies hosts a research symposium each academic year to showcase students' activities. Dr. Gavin Smith of University of North Carolina - Chapel Hill shared his research project with the students in 2017, and Dante Council, a Ph.D. student from Old Dominion University, shared his work in progress at the 2018 symposiums. Through the SUMERX program, students pursuing the minor attended University of Delaware's Disaster Research Center, University of Rhode Island, and Old Dominion University. Student Irenia Ball, attended University of Delaware's Disaster Research Center completed her senior paper that focused on natural disaster preparedness. Her abstract was published in Mississippi Academy of Science (MAS) journal.

SUMERX Interns



2018



2017



2016

Symposium Lecturers---UNC Chapel Hill & Old Dominion



7. Publications:

Mage, D. Reed, S. Hokins, A. Mangum, C. & Banerjee, S. (2018) Using Arc GIS to Map Disaster Effects on Mississippi, abstract published in *The journal of Mississippi Academy of Sciences* (ISSN 0076-9436) vol 63, 1 February edition

Bryant, J. Hill, C. Bibbs, M. Boler, D. & Khan, S. (2018) *Role of Effective Communication in Disaster Preparedness*, abstract published in *The journal of Mississippi Academy of Sciences* (ISSN 0076-9436) vol 63, 1 February edition

Ball, I & Laiju, M. (2017) Socio-demographic Characteristics and Natural Disaster Preparedness among Mississippi Residence, abstract published in *The journal of Mississippi Academy of Sciences* (ISSN 0076-9436) April edition.

Presentations:

Laiju, M. (2016) *Natural Disaster and Child Trafficking*, Mellon Fellowship

Laiju, M. (2017) *A Global Issue: Natural, Manmade Disaster, and Exploitation of Children*, Pardee RAND Faculty Leaders Fellowship, manuscript under review.

Laiju, M. & Banerjee, S. (2017) *Innovative Interdisciplinary Undergraduate Curriculum in Homeland Security at a HBCU*, Presented at the 10th Anniversary Homeland Defense & Security Education Summit on March 23, 2017

Laiju, M. (2018) *Social Impact of Natural and Manmade Disasters*. developed this course

DCS Symposium



2018



2017



2016

MAS Conference



2017



2018

8. **Lessons Learned:**

I would keep the education component as it is. However, given the chance I would include a summer program such as offering a workshop (in collaboration with local emergency management agencies) for the surrounding community and STEM education courses (resilience related) for the high school and community college students. These would have helped the program as well the college in recruiting students.

9. **Tables:** Tables: 1, 2A, 2B, & 3

Table 1: Documenting CRC Education Project Courses and Enrollments

Courses Developed and Taught by Tougaloo College under Project Interdisciplinary Minor: Disaster Coastal Studies (DCS)				
<u>Period (January 2016 – June 2018)</u>				
<u>Course</u>		<u>Developed (D), Revised (R), and/or Taught (T), by Project Year</u>		
<u>No.</u>	<u>Title</u>	<u>1</u>	<u>2</u>	<u>3</u>
DCS 201	Introduction to Natural & Manmade Disaster	-	R, T	T
Elective (E), Concentration (C), Minor (M)			M	M
Enrollment		*	10	10
*Offer in fall semester				
DCS 211	Public Health Issues in Disaster Preparedness	T	T	T, R

Elective (E), Concentration (C), Minor (M)			M	M
Enrollment		1**	8	11
**Schedule to offer in fall; 2016 spring offered as an independent study for a graduating Senior with DCS minor				
DCS 301	Political & Legal Issues in Disaster Preparedness	T	T	T, R
Elective (E), Concentration (C), Minor (M)		M	M	M
Enrollment		14	10	8
DCS 320	Emergency Preparedness Response & Planning.	T	R, T	T
Elective (E), Concentration (C), Minor (M)		M	M	M
Enrollment		16	5	11
DCS 314	Economic Aspects of Disaster.		T	T, R
Elective (E), Concentration (C), Minor (M)			E	E
Enrollment			13	7
DCS 311	Psychological Dimension of Disaster	-	-	R
Elective (E), Concentration (C), Minor (M)			E	E
Enrollment		* **		
*** offer one elective in fall for each academic year				
DCS 400	Internship	T	T	****
Elective (E), Concentration (C), Minor (M)		M	M	
Enrollment		7	8	-
****offer only to students graduating with minor & completion of other requirements				

Table 2: Documenting External Funding and Leveraged Support

2A: External Funding			
<u>Title</u>	<u>PI</u>	<u>Total Amount</u>	<u>Source</u>
<i>Natural Disaster & Child Trafficking</i>	M. Laiju	\$4,000.00	Andrew Mellon Foundation
<i>A Global Issue: Natural, Manmade Disaster, and Exploitation of Children</i>	M. Laiju	\$4,000.00	Pardee RAND Fellowship
2B: Leveraged Support			
<u>Description</u>			<u>Estimated Annual Value</u>
Class room space and computer lab for GIS Training, space for hosting Symposium			\$15,000
Portion of university indirect returned to project			\$10,000
25% release time for PI			\$11,000

Table 3: Performance Metrics:**LAIJU PERFORMANCE METRICS**

<u>Metric</u>	<u>Year 1</u> (1/1/16 – 6/30/16)	<u>Year 2</u> (7/1/16 – 6/30/17)	<u>Year 3</u> (7/1/17 – 6/30/18)
HS-related internships (number)	7	8	0
Undergraduates provided tuition/fee support (number)			
Undergraduate students provided stipends (number)	15	17	20
Graduate students provided tuition/fee support (number)	NA	NA	NA
Graduate students provided stipends (number)	NA	NA	NA
Undergraduates who received HS-related degrees (number)	3	5	4
Graduate students who received HS-related degrees (number)	NA	NA	NA
Certificates awarded (number)	NA	NA	NA
Graduates who obtained HS-related employment (number)			0
Lectures/presentations/seminars at Center partners (number)	1	1	1
DHS MSI Summer Research Teams hosted (number)	0	0	0
Journal articles submitted (number)	0	0	0
Journal articles published (number)	0	0	3
Conference presentations made (number)	1	4	6
Other presentations, interviews, etc. (number)	10	12	14
Trademarks/copyrights filed (number)	0	0	0
Requests for assistance/advice from DHS agencies (number)	2	1	1
Requests for assistance/advice from other agencies or governments	5	2	2
Total milestones for reporting period (number)	7	7	7
Accomplished fully (number)	4	5	6
Accomplished partially (number)	3	1	1
Not accomplished (number)	-	1	-

10. Year 3 Education Activity and Milestone Achievement:

**Education Activities and Milestones: Final Status as of 2018
LAIJU**

Reporting Period 7/1/17 – 6/30/18			
Education Activities	Proposed Completion Date	% Complete	Explanation of why activity/milestone was not reached
Analyze the neighborhood outreach initiative survey to enhance future training	July 2017	100%	
Offer 3 courses for DCS minor	August 2017	100%	
Select new students for research and training (GIS & Survey Construction and Analysis)	August 2017	100%	
Test the validity & reliability of the questionnaire (based on theoretical construct) (pre-test)	September 2017	100%	
Submit the proposed work plan to Institutional Review Board (IRB) for permission to collect data;	September 2017	100%	
Seek faculty approval for the professional certificate program	October 2017	100%	
Student/Faculty/staff certified training in GIS	October 2017	100%	
Neighborhood Outreach Training	November 2017	0%	MEMA emergency training Personal was busy due to inclement weather condition
Collect data	December 2017	100%	
Promote the new certificate program	November & December 2017	0%	Received the board approval in April 2018

Offer 3 courses for the minor	January 2018	75%	Internship course was not offered; after completing the core requirements students enroll in this course; current DCS minors are interested in the certificate program, so they plan to take the course next year.
Tentative: launch certificate program	January 2018	0%	Explained
Select and place intern students to end – user hosting organizations	February 2018	0%	Course was not offered
DCS Research Project students participate at MAS	February 2018	100%	
Host DCS Research Symposium	April 2018	100%	
Education Milestones	Completion Date		
Students working in GIS project& risk identification and perception awareness project present at Mississippi Academy of Science (MAS) conference	March 2018	100%	
Intern and DCS minor students present at DCS Symposium, MAS & TCMC Undergraduate Research Symposium	February & April 2018	100%	
Invite CRC partners & end-user agency personnel as guest speaker	April 2018	100%	
Expecting 4 students graduate with DCS minor Encourage graduates to attend graduate program at CRC Institute /seek employment at end-user agencies	May 2018	100%	
Send 2 students to CRC partner /end -user institute for summer internship	June 2018	100%	

11. Year 3 Transition Activity and Milestone Achievement:

Transition Activities and Milestones: Final Status as of 2018

Reporting Period 7/1/2017 – 6/30/2018			
Transition Activity	Proposed Completion Date	% Complete	Explanation of why activity/milestone was not reached
Recruit end-users to provide internships (Research Students)	July 2017	100%	
Recruit end-users to provide internships (course)	January 2018	0%	The course was not offered; due to change in certificate program; launch in Fall of 2018
Recruitment for Certificate Program	January 2018	0%	The certificate program received the necessary approval in March 2018
Transition Milestone			
Internships at end-user organizations	June 2018	60%	Only for research students; Internship course was not offered
Initiative to Increase enrollment in DCS minor	July 2017	100%	

Disaster Coastal Studies Minor Student Tracking

January 2016 – June 2018

Year	Student Enroll in Courses	Students in Research Project	Total Students	Declared Minor	Internship/End-User	Graduate with minor	Job/ Grad. Prog.
2015-16	38	8	46	7	6	1	
2016-17	54	8	62	9	8	5	3 applying at MEMA
2017-18	47	8	55	10	6	4	