



Certificación Núm. 84

Año Académico 2019-2020

Yo, *Claribel Cabán Sosa*, Secretaria del Senado Académico del Recinto de Río Piedras, Universidad de Puerto Rico, **CERTIFICO QUE:**

En la reunión ordinaria a distancia celebrada de forma asincrónica a partir del 17 de abril de 2020, y culminada de forma sincrónica el 23 de abril de 2020, se acordó por unanimidad:

- Aprobar la **Propuesta para establecer un Certificado Académico Post Bachillerato en Planificación de Desastres**, de la Escuela Graduada de Planificación, Dr. Salvador Padilla Escabí.
- La Propuesta forma parte de esta Certificación.

Y para que así conste, expido la presente Certificación bajo el sello de la Universidad de Puerto Rico, Recinto de Río Piedras, a los veinticuatro días del mes de abril del año dos mil veinte.

Dra. Claribel Cabán Sosa
Secretaria del Senado

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Anejo



**University of Puerto Rico
Río Piedras Campus
Graduate School of Planning**

**Proposal to establish a Post-Baccalaureate Academic Certificate in
Disaster Planning for the Dr.Salvador Padilla Escabí Graduate School of
Planning at the University of Puerto Rico – Río Piedras**

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April 13-15, 2020

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II. Introduction

A. Name of the program and academic degree to be offered

The Salvador Padilla Escabí Graduate School of Planning (EGP) at University of Puerto Rico-Río Piedras proposes the creation of an academic degree program for a Post-baccalaureate Academic Certificate in Disaster Planning. The Certificate Program in Disaster Planning seeks to educate professionals with the competencies needed to practice in this area of study.

At the international level, disaster losses continue on the rise. In 2017, disasters affected 96 million persons and resulted in 9,697 deaths, and over \$334 billion in losses (CRED, 2018). This field of study began in the 1960s and has gained notoriety as extreme events have resulted in increased, often preventable, losses. More recently, concerns about the effects of climate change worldwide stress the importance of the field.

The Post-baccalaureate Academic Certificate Program expands the offerings of the master's degree granted by the EGP today and remains within the framework of its mission and accreditation standards. This Program represents an academic opportunity for students interested in acquiring knowledge, skills and practice in an interdisciplinary area of great need in Puerto Rico - as well as in the Caribbean Region and Latin America, and with high potential for placement options in the workplace.

For purposes of EGP accreditation, the name of the program in English is *Post-baccalaureate Academic Certificate in Disaster Planning*.

B. Program Description

The proposed academic degree is a Post-baccalaureate Academic Certificate in Disaster Planning. The suggested classification within the Institutional Program Classification System of the United States Department of Education (IPEDS Code) is 43.0302 (Crisis/ Emergency/Disaster Management).

This program is for students seeking knowledge on how planning plays a vital role in disaster reduction; before, during, and after an extreme event. The Certificate consists of 16 credits of courses organized in thematic areas, which include:

- Disasters, Emergency Management, and Society
- Natural Risks and Hazards
- Disaster Research Methods
- Regulatory and Public Policy Instruments (plans, permits, and regulations)
- Development and Social Vulnerability
- Critical Infrastructure and Design
- Series of special topics seminars by invited professionals

This program seeks to diversify the Rio Piedras Campus academic offer with a minimal impact on expenditures and without affecting the space resources necessary for its implementation. As for its future projection, an essential element is that it strengthens the interdisciplinary training of graduates who complete the master's degree in planning and the certificate program. It also enriches an interdisciplinary perspective in students who only complete the Certificate. On the other hand, this program also offers opportunities to stimulate research in this area of study, an objective closely linked to the accreditation requirements.

C. Non-conventional modalities

The first year of the implementation the certificate will be offered face-to-face. Starting its second year, the program will be implemented using a **hybrid teaching modality (presential and distance education) to impart the competencies contained in the proposed curriculum.** During the first year, professors will be certified to offer courses online. We intend to use distance learning options, as much as possible, to include practical experiences to complement the program, such as workshops or series of talks by professional guests, academics and other experts in the field.

D. Date in which the program is expected to begin

Although the beginning of the program will depend on the evaluation and authorization processes of the various institutional instances, **the EGP hopes to begin offering the Certificate in August 2020.** One of the objectives of the recently approved Regulation for the Creation of New Academic Programs of the University of Puerto Rico (Certification Number 64, 2018-2019, Governing Board) is to expedite the creation of new programs reducing the time allocated to institutional units to provide a decision over the endorsement of the proposal. These new circumstances must work in favor of more rapid evaluation and authorization processes.

E. Duration of the program and maximum time to complete the degree

The curriculum design allows students admitted to the Program, who follow the proposed full-time curriculum sequence, to complete the requirements in three semesters. Considering that most of the students will be working professionals, the curricular sequence proposes a maximum of two courses per semester. Students who are required to follow the part-time curriculum sequence (one course each semester) may complete the program within a maximum period of four semesters. The allowed time to complete the degree follows Certification 51 (2017-2018) for graduate studies.

Students must maintain a minimum 3.00 GPA in order to continue in the Program. Academic Evaluations by the EGP Student Affairs Officer every semester will help in identifying students' academic progress.

Students will not be able to request economic assistance since the Certificate does not provide for a degree.

III. Professional Accreditation and Requirements for Professional Practice

The Graduate School of Planning at University of Puerto Rico – Río Piedras Campus offers a Master's Degree in Planning accredited by the *Planning Accreditation Board (PAB)* until December 31, 2022. The PAB is an institution that accredits programs in the United States offering baccalaureate and graduate degrees in planning. The accreditation process is based on the standards approved by the PAB from the input of the following public organizations and affiliated with the PAB: *The American Planning Association (APA)*, *the American Institute of Certified Planners (AICP) - the institute of professional planners within the APA -*, and *the Association of Collegiate Schools of Planning (ACSP)*.

A. Accrediting Agency

Planning Accreditation Board. Accredited Planning Programs.

<http://www.planningaccreditationboard.org/index.php?id=30>

Public organizations affiliated with the 'Planning Accreditation Board

- *American Planning Association*
<https://www.planning.org/>
- *American Institute of Certified Planners*
<https://www.planning.org/aicp/>
- *Association of Collegiate Schools of Planning*
<http://www.acsp.org/>

The Graduate Academic Certificate Program in Disaster Planning, as part of the EGP, would be part of the accreditation process carried out by the PAB.

The evaluation report of the PAB committee that visited the EGP in February 2017 was very positive towards the master's program (Bruce Knight's communication to Rector Luis Ferrao – October 28, 2017 acknowledged “many areas of excellence,”). For example, among the strengths are a committed, collaborative, and participating faculty, an enthusiastic student body, and an excellent and robust process for assessing learning and achievements. The evaluation committee identified opportunities for growth and improvement in the areas of sustainable development and research on resilience; which are topics germane to the study of disasters. The report emphasizes the internationalization of the Program and the opportunity for EGP of recruiting students from the Caribbean and Latin America. This Graduate Certificate Program presents an opportunity for the internationalization of our programs. The accreditation report noted the significant improvement in several areas in which we face challenges in the 2010 visit (see: PAB Site Visit Report, Final Report. April 7, 2017).

The EGP has a newly instituted *Center for Coastal Research and Planning*, led by Dr. Maritza Barreto Orta, with the potential to generate interdisciplinary research as the accreditors recommend, and in which both faculty and students can conduct research.

B. Requirements for Professional Practice

The practice of professional planning in Puerto Rico is regulated by Law 160, August 23, 1996, as amended. This law requires a license granted by the Examining Board of Professional Planners (JEPP) under the Auxiliary Secretariat of Examining Boards in the Department of State of Puerto Rico. The requirements for this license include a Master's degree in Planning and passing a revalidation exam that examines the JEPP. For purposes of the proposed Certificate, this requirement only applies to graduates of the Master, irrespective of whether they are in the Graduate Certificate program. A student who only completes the Certificate, but does not have a Master's Degree in Planning cannot practice as a professional planner in Puerto Rico. For some students, this requirement may be a stimulus to enroll in the Master of Planning.

IV. Justification and New Program's Pertinence

Several events cemented the need and relevance of the proposed program. First, the catastrophic outcomes of Hurricanes Irma and Maria exposed the social, ecological and infrastructure vulnerability of Puerto Rico and the limited capacity of the local and federal government to effectively respond and take on the recovery process. The unprecedented disruption and losses associated with these events marked the critical need for an academic program in disasters planning.

Because of its geographic location and geophysical characteristics, Puerto Rico is exposed to several natural hazards. To compound effects, the development of infrastructure in ways that created new risks has increased our sensitivity to those hazards. Furthermore, the economic development programs and initiatives implemented on the island show mixed outcomes and are unsustainable. In a context of high public debt and austerity measures to begin repayment, many programs and services have been eliminated or are under budget. While unemployment rates show a historical reduction, it is also true that residents are moving to the mainland at an unprecedented rate. The economic reality of Puerto Rico, the experience of the 2017 hurricane season, combined with the possibility for an increase in the frequency and intensity of extreme events associated to climate change, is a major source of concern that must translate into a process of preparedness and capacity building. The combined effect of hurricanes Irma and María in Puerto Rico, and the devastation that followed it has been a revealing experience of our vulnerability, at the institutional and citizenship level, to face this type of extreme events; especially with the many socioeconomic, physical infrastructure and governance challenges we had before these hurricanes. Due to Puerto Rico's geographical location and its geological characteristics, we know that hurricanes are only one of several natural hazards to which we are exposed. We are also vulnerable to floods, landslides, earthquakes, droughts, heatwaves, and tsunamis are added, to name a few. One of the lessons of this experience is the need to expand the practice of planning to alleviate the effects of

extreme events on the routine of citizens and the need for trained professionals in this area to intervene effectively and efficiently to throughout the disaster cycle. If, as James Schwab (2019: 5) reminds us, “natural hazard events become disasters only when we place people and the built environment in their path,” planning plays an important role trying to “avoid such results always make it possible. ”

Like many people in Puerto Rico, and as it is also characteristic of disasters as occasions of sudden social changes, in the EGP, **we saw the opportunity to rethink Puerto Rico and work towards the construction of a resilient island.** It is not accidental then that we began to discuss the idea of the Academic Certificate program in October 2017, at the first faculty meeting when classes had not resumed in the Campus and had passed just a month after Hurricane Maria. We believe that the development of this graduate academic certificate program will further our capacity to confront the challenges we face in these new times. The experiences of other cities in the United States and other parts of the world indicate that post-disaster recovery can be perceived in different ways, takes a long time, requires multiple actors and is a process in which plans and planning play critical roles (Johnson & Olshansky, 2016: 5, 11; Phillips, 2017).

The Certificate Program was originally thought of as part of a larger project that contained research, teaching / learning, technical assistance, and the generation of planning and public policy recommendations. We call this project Planning for the Sustainable Recovery of Puerto Rico after Hurricane María, and we present it as our base platform to channel the interest expressed by various organizations and planning programs in the US to develop collaborations. This network includes, among others, the PAB, APA, ACSP, the Center for Puerto Rican Studies (Hunter College), Urban Institute, FEMA, SURGE and EPA.

Secondly, we had the opportunity to develop a collaboration with the FEMA Community Planning and Capacity Development team, starting with a meeting requested by the then coordinator of this team (Shannon McLachlan) to the direction of the EGP. This meeting provided us with valuable space to help them better understand the context of Puerto Rico, especially in terms of governance and the general decision-making process. McLachlan was particularly interested in the role of planning and planners in the recovery process. We enclose a letter of support from FEMA to this Certificate (see Schedule). It undertakes to collaborate by offering experts on the subject for the development of the certificate and recommendations, in addition to promoting the Certificate for recruitment purposes.

Four products of this collaboration deserve mention:

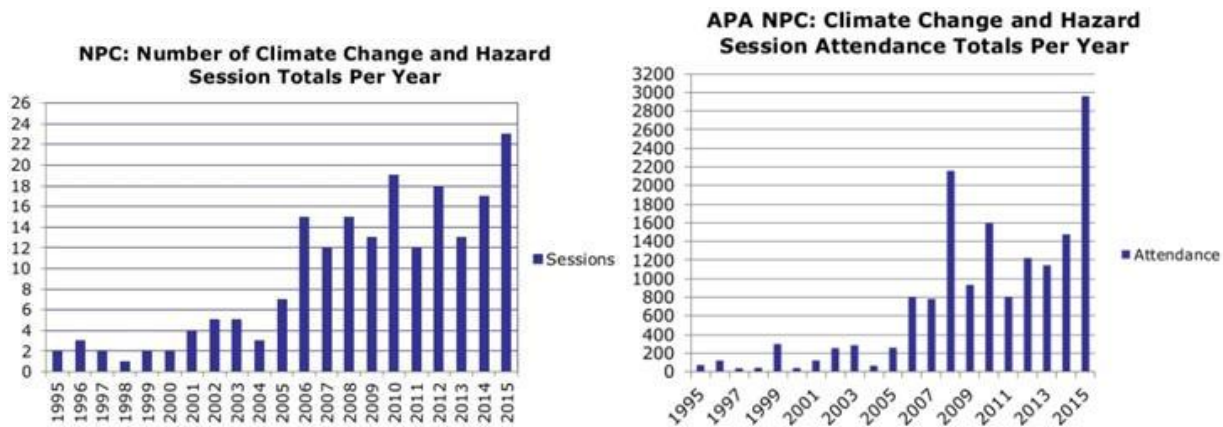
First, based on several conversations and participation in meetings, FEMA developed an initiative to strengthen the institutional capacity of the municipal governments that we believe continues to be an imperative need. This initiative included the recruitment of around 20 professional planners to provide technical assistance to mayors.

Second, FEMA co-sponsored and collaborated in the organization of a two-day Symposium entitled: Resilient Planning and Recovery in Puerto Rico, which was held at the Río Piedras Campus on May 2018. This event provided an opportunity to bring experts from various schools of US planning to share their experiences in the study of disasters and also to have local experts presenting their views on what was happening in Puerto Rico. We also have a

representative from the American Planning Association. Judging by the attendance and the rich exchange that took place, this symposium had an excellent reception of professional planners, academics, and students.

Third, FEMA was interested since the beginning in supporting the development of the Graduate Certificate, an effort that put us in touch with several professors of planning programs in the U.S. mainland that have collaborations with the agency and certificates in similar areas. We continue discussions with FEMA on this issue. (See Annex 2 FEMA Support Letter)

Fourth, the trends, approaches, and changes that have been registered in the discipline in the area of disasters, especially the emphasis on the field of hazard mitigation - which seeks to reduce the risk of hazards -, has been an important incentive to give priority to the Graduate Certificate. For example, the available academic literature that analyzes experiences with disasters in the United States and elsewhere in the world provides important examples of the practice with valuable lessons for planning. Several of these studies, for example about Hurricane Katrina and about Hurricane Sandy, helped us to put into perspective the experience with Hurricane Maria in Puerto Rico, especially from the point of view of planning management. On the other hand, the increasing interest of the planners in matters related to disasters, mitigation of hazards and climate adaptation are reflected in the attendance and the number of sessions organized in the National Planning Conferences of the APA. For example, the following data reflect the increase in total attendance and per year to sessions on climate change and hazards, and the total sessions on this topic.



Fuente: J. Schwab (2019, 6). Planning Systems for Natural Hazard Risk Reduction. *Oxford Research Encyclopedia of Natural Hazard Science* (oxfordre.com/naturalhazardscience).

In line with the objectives of the 2015 Strategic Plan of the EGP, the 2018 Development Plan, the Post-baccalaureate Academic Certificate in Disaster Planning provides us with an opportunity to update the academic offer in the light of recent developments in the discipline with high potential to expand the applications of that knowledge, as in pre and post-disaster planning. In addition, it allows us the integration of flexible teaching modalities aimed at offering hybrid and on-line alternatives as part of the academic offer, management that accreditors have recommended and is of high institutional interest.

This program can also give impetus to the goal of internationalization of the EGP, an area of growth that accreditors have highlighted. The Academic Certificate can be especially attractive to people in the Caribbean region and Latin America. It will be offered in Spanish and focuses on an island reality. In addition, the EGP is the only planning school accredited by the PAB in Latin America.

To develop the proposal of the Post-baccalaureate Academic Certificate, the EGP has the physical, human, technological, bibliographic resources, lines of research, and learning resources necessary to support this program. An investment of new resources is not required, except for the hiring of part of the faculty that we have lost by withdrawal or resignation.

V. Relationship of the New Academic Program with the Mission and the Current UPR Strategic Plan, as well as, to the Mission and Strategic Plan of the Graduate School of Planning

A. Relationship with the mission and UPR and EGP Strategic Plans

The proposal of the Post-baccalaureate Academic Certificate in Disaster Planning is in line with Certification No. 67 Year 1989-90 of the Academic Senate on the Mission of the Río Piedras Campus of the University of Puerto Rico; Certification No. 79 year 2017-2018 on the Strategic Plan of the Río Piedras Campus of the University of Puerto Rico (2018-2023) and Certification #51 of the Academic Senate of the 2017-2018 academic year.

Certification No. 67 Year 1989-90 presented by the mission of the Campus aligns with the program proposed in sections of mission 1 and 2 that indicate:

“To promote the integral formation of students through study programs that promote: intellectual curiosity, critical capacity, continuous learning, effective communication, appreciation and cultivation of ethical and aesthetic values, the participation of the processes of the Campus, as well as reflection and social responsibility.”

“Provide graduate education of the highest quality whose core elements are research and creation, and that helps strengthen undergraduate education. In addition, provide post-baccalaureate programs for the training of professionals of the highest caliber, committed to the ideals and values of Puerto Rican society.”

The proposal for the Disaster Planning Certificate offers an academic-research space for continuous learning on the subject of disasters while containing the requirements of regulatory, academic, and professional programs. Within a theoretical / practical approach, it provides a space for the preparation of professionals who will be able to offer services to the different public and private instances in keeping with their needs.

In addition, the proposed Disaster Planning program is aligned with the Strategic Plan of the Río Piedras Campus in the goal related to academic offers and support services for student success, specifically in goal 2.2, which states: *“The Campus will renew the face-to-face academic*

offer including specialized services, so that it maintains the highest academic quality and responds to the developments of the disciplines.” This goal aligned with objectives 2.2.1: “Incorporate curricular innovation into academic programs and specialized services. technology and opportunities for entrepreneurship and social collaboration” and 2.2.2: “Develop training experiences in research, creation, community service, internships and / or professional practices in academic programs.”

This Certificate presents an academic offer that has a very good chance of generating a high recruitment of local and international students to offer: an academic offer that meets the current demands and needs related to the protection of life and property from disasters; an innovative curriculum offered by professionals specialized in the subject of various research and academic profiles; an offer with an interdisciplinary perspective; and a practical knowledge that will contribute to the search for solutions. In addition, this proposal provides opportunities to strengthen not only the preparation of new professionals in the area of disasters but also to promote professional improvement along with the new skills that the public and private sector need.

The proposed program is aligned with the guiding principles of Certification # 51 of the Academic Senate of the 2017-2018 academic year. Specifically, it aligns with the principles that establish the following:

"It will prepare graduates with a wide and diverse intellectual formation, self-taught capable of using their knowledge and leadership to transform their immediate environment, with the necessary skills to perform successfully in the world of work and committed to ethical behavior."

"It will contribute to the development and quality of life of Puerto Rican society and will promote a sense of commitment to it in the attention to their problems and needs. They will also stimulate a deep sense of community services in the construction of a just and democratic society that privileges education as a means to empower individuals and groups to continue learning throughout life until they reach their maximum development."

"Students will strengthen knowledge and analysis of the historical-social reality of Puerto Rico framed in the Caribbean and Latin American region with a projection to the international community."

It is clear that the preparation that our students acquire through the courses of this Certificate in Disaster Planning program will provide participants with the basic tools for solving disaster-related planning problems. This will allow graduates and future servants of the country to contribute to the processes of preparation, mitigation, and recovery in the event of natural and anthropogenic disasters.

In addition, the program aligns with the vision, mission, and goals of the Strategic Plan of the Graduate School of Planning (EGP) 2015-2020, which in turn are consistent with the University's plan and vision.

Vision and Mission of the Graduate School of Planning:

An interdisciplinary professional training program in academic and applied planning and research of excellence, which contributes to the discipline and its practice, has a significant impact on public management in the country and is recognized in the Caribbean, Latin America, and the United States — committed to the preparation of highly trained planning professionals, with problem-solving, analytical and communication skills, sensitized in critical thinking and innovation, and who may have a distinguished practice in the public, private and non-organizations Government in Puerto Rico and abroad.

To train planning professionals with the theoretical and technical knowledge required for the exercise of an effective and ethical professional practice, well-founded scientifically and historically, and at the same time creative, relative to the integral planning and land planning, to the various fields, subjects and scales in which the discipline and its practice are organized, and to the collective decision making that advance the general interest and propitiate sustainable development.

Advance knowledge to strengthen discipline and its applications through interdisciplinary research that integrates theory and practice and interrelates knowledge to improve planning processes, and through the evaluation of policies, plans, program, and projects.

Likewise, the components of the proposal for post-graduate certification in Disasters meet the goals established in the EGP Strategic Plan, namely:

Goal 1. Provide an academic program of excellence in Planning.

Goal 2. Develop a vigorous research, publications, and dissemination program to drive innovation in Planning.

Goal 3. Intensify the impact of the EGP on public policy and professional practice in Puerto Rico.

Goal 4. Expand international links, projection, and recognition of the EGP as one of the main planning schools in Latin America and the Caribbean.

Goal 5. Strengthen and expand relations with former EGP students in Puerto Rico and abroad to enrich the academic offer and its resource base.

Goal 6. Graduate planners with the highest standards of ethics, inter and trans-disciplinary knowledge for the analysis of complex problems, and the ability to formulate and communicate innovative, creative, and flexible solutions.

One of the components of the program is the development of the distance education modality, in order to keep up with the demands of the new student profile in the country. This interest is aligned with several of the goals of the Strategic Plan of the Río Piedras Campus of the University of Puerto Rico.

B. Relationship of the academic program with others in the unit, the system, and the country

There is currently no program, neither master's degree nor certificate in disaster planning in the unit, UPR system, and Puerto Rico. Yet, there are programs available in the United States. Below are some of those we have explored during the creation of this proposal:

1. California State University, Long Beach, Masters in Emergency Services Administration
2. City University of New York – John Jay College, Master of Public Administration – Public Policy and Administration with a Concentration in Emergency Management
3. Denver University, Emergency Planning, and Response, Concentration of a Master's Degree or Certificate
4. Georgetown University, Master of Professional Studies in Emergency and Disaster Management
5. Lynn University, Master of Science in Administration/Specialization in Emergency Planning
6. Nova Southeastern University, MS in Disaster and Emergency Management
7. Texas A&M University, Master of Urban Planning, Graduate Certificate in Environmental Hazard Management
8. University of Central Florida, Masters in Emergency and Crisis Management, and Graduate Certificate in Emergency Management and Homeland Security
9. University of Delaware, MS and PhD in Disaster Science and Management
10. University of Denver, University College – Masters in Security Management, Graduate Certificate in Emergency Planning and Response
11. University of North Carolina – Chapel Hill, Masters in City and Regional Planning, Natural Hazards Resilience Certificate
12. University of North Texas, Master of Public Administration with Specialization in Emergency Administration and Planning
13. University of South Florida, Master of Public Health in Global Disaster Management, Humanitarian Relief, and Homeland Security

VI. Conceptual framework

A. Mission of the Certificate Program

The Certificate expands the academic offer of EGP in the light of recent developments in disaster planning in order to foster a new kind of expertise in Puerto Rico and the Caribbean, integrates national disasters and planning frameworks to practices and research.

A. Goals and objectives of the Certificate Program

Goal 1: Enhance the relevance of the EGP through the development of unique and innovative training in disaster planning, attractive to not only planning professionals but also to diverse graduate students interested in these matters.

Objective 1.1 Develop a curriculum that promotes students' **knowledge** that incorporates the National Disaster Planning Frameworks as well as planning approaches to disasters and issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability. Knowledge includes the following:

1. Fundamental concepts in disaster science and emergency management for planning
2. Theoretical paradigms associated to the study of planning, disasters and natural hazards.
3. Methodologies to analyze risks, impacts, and consequences associated with different types of hazards.
4. Origin, processes and spatial distribution of natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion.
5. Implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning.
6. Impacts of extreme events on the continuity and functioning of social, technical, and natural systems.
7. Basic components of a Risk Profile.
8. Relationship between a spatial and temporal analysis of the risk profile and the design of efficient plans and protocols.
9. Familiarity with the National Incident Management System (NIMS), the National Preparedness Goal and System, and the National Planning Frameworks.
10. Public policies and strategies for the management and protection of critical infrastructure.
11. Mitigation of risks associated with infrastructure vulnerability.

Objective 1.2 Offer hybrid and on-line courses that support professionals' access to post-graduate education on disaster planning.

Goal 2: Develop and maintain an academically sound and technically competent faculty which ensures an avant-garde training not only in official courses, but also through continuous seminars and hands-on workshops.

Objective 2.1 Promote academic discussions on current and emerging disaster planning issues through seminars that contribute in identifying potential research themes.

Objective 2.2 Integrate research related **skills** in the curriculum as part of student's competencies. Skills include the following:

1. Logical and critical thinking for the development of research questions for the pre and post-disaster stages
2. Critical analysis of existing information, literature and research on disaster management
3. Evaluation of technical vulnerabilities of the critical infrastructure
4. Zoning application for risk mitigation
5. Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters

6. Geographic analysis associated with risks and disasters

Goal 3: Graduate a new kind of professional with a strong foundation on the necessary ethical competencies for working with all the stages of disasters and related issues.

Objective 3.3 Cultivate **values** in students related to disaster planning. Learning objectives related to values include the following:

1. Analyze the of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of disasters.
2. Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning
3. Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers
4. Evaluate changes in public policy that have resulted from catastrophes.
5. Apply basic analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions

B. Educational philosophy

The curriculum will support students in acquiring a fundamental understanding of the practice of planning for emergencies and disasters, of the National Disaster Planning Frameworks, and of the application of different frameworks to issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability. The curriculum prepares students to serve as professionals who can provide support to governments, businesses, communities, and non-governmental organizations throughout the life cycle of disasters: preparedness, mitigation, impact phase, response, and recovery. The curriculum provides for a strong foundation on theoretical approaches, as well as analytical methods to critically and ethically think, act and support decision-making about impacts and risks of disasters to society.

C. Coherence and sufficiency of the program

The coherence and sufficiency of the Certificate program is available in Annex 5 Student Profile Alignment with Conceptual Framework and Curriculum Design. The student profile of the Certificate is organized in competencies that are divided into knowledge, skills and values. This classification of competencies is based on the accreditation criteria of the American Planning Accreditation Board.

VII. Curricular Design

A. Curricular Scheme and Balance

The Certificate consists of six courses with a total of 16 credits, which can be completed in three semesters. If there is no background in Planning (having completed at least 50% of the credits leading to the Master in Planning), the student must take an introductory course to the discipline prior to taking the first semester of courses proper to the Certificate. During the three semesters, students must enroll in four to six credits, following the sequence indicated in the following table.

Table 1: Curricular sequence of the Graduate Certificate in Disaster Planning

| Semester/Period Code | Course | Credit Hours | Contact Hours |
|--|--|--------------|---------------|
| Summer or previous semester (pre-requisite) | | | |
| PLAN 6xxx | Introduction to Planning Theory and Practice | 1 | 15 |
| Subtotal | | 1 | 15 |
| First Semester (core courses) | | | |
| PLAN 6xxx | Disaster Planning Theory | 3 | 45 |
| PLAN 6xxx | Natural Hazards and Risks | 3 | 45 |
| Subtotal | | 6 | 90 |
| Second Semester (core courses) | | | |
| PLAN 6XXX | Research Methods for Disaster Planning | 3 | 45 |
| PLAN 6XXX | Regulatory and Public Policy Instruments for Disaster Planning | 3 | 45 |
| Subtotal | | 6 | 90 |
| Third Semester (choose one elective) | | | |
| PLAN 6XXX Elective | Introduction to Critical Infrastructure Systems | 3 | 45 |
| PLAN 6XXX Elective | Development and Social Vulnerability | 3 | 45 |
| PLAN 6XXX | Professional Seminar | 1 | 15 |
| Subtotal | | 4 | 105 |

| | | |
|--------------|---|--------------------|
| Total | <ul style="list-style-type: none"> ▪ 16 for those with 50% or more approved credits from the MP in Planning and, ▪ 17 credits for students from other programs who have to take the Intro course of 1 credit. <p>During the third semester, all students must select one of the two elective courses offered.</p> | 285 or 300) |
|--------------|---|--------------------|

B. Courses that comprise the curriculum

The Program will be hybrid mode, with face-to-face, hybrid, and totally on-line courses. All courses are newly created. The content of the courses is described below:

1. Introduction to Theory and Practice of Planning (remedial, hybrid starting second year of the certificate)
2. Risks and Threats (core, on-line during second year of the certificate)
3. Methods and Techniques for Disaster Planning (core, face-to-face in classroom)
4. Public Policy Framework and Regulation of Disaster Planning (core, on-line during second year of the certificate)
5. Introduction to Critical Infrastructure (elective, on-line during second year of the certificate)
6. Development and Social Vulnerability (elective, on-line during second year of the certificate)
7. Professional Seminar (required, hybrid during second year of the certificate)

For its part, the introductory (pre-requisite) course will include the following fundamental topics:

1. History of Planning and Rational Approach to Planning
2. Spatial Planning
3. Strategic Planning
4. Justice in Planning
5. Planning as A Political Endeavor
6. The Public Realm in Planning

The following three certificate examples from other institutions illustrate the balance of courses, where the majority or all are core courses, and add up to sixteen credits for the most part.

1. The Emergency Management, Planning and Administration Online Certificate at the University of Wisconsin, Green Bay, is a fifteen-credits graduate offering. This certificate does not have elective courses; all are core courses including the following ones:
 - Principles and Practices of Emergency Management
 - Strategic Emergency Preparedness, Planning, and Implementation

- Principles and Practices of Disaster Response Operations and Management
- Disaster Recovery
- Political and Policy Dimensions of Emergency Management

<https://www.uwgb.edu/emergency-management/>

2. The Emergency Services/Disaster Management (ES/DM) Graduate Certificate at the College of Design, Construction & Planning of the University of Florida, requires the following four Distance Learning classes, with no electives:
 - Emergency Services – Disaster Response
 - Hazard Mitigation and Preparedness
 - FES Response Planning
 - Homeland Security and Emergency Management

<https://dcp.ufl.edu/rinker/academics/certificates/esdm-certificate/#>

3. The Emergency Management and Continuity Planning (EMCP) Certificate Program at the School of Public Health of the University of Illinois at Chicago, requires sixteen credits, and a capstone.
 - Foundations of Emergency Management and Continuity Programs (3 credits)
 - Environmental Risk Assessment and Management (4 credits)
 - Critical Infrastructure and Resource Protection Planning (3 credits)
 - Strategic Emergency Management and Continuity Planning (3 credits)
 - Disaster Response and Recovery Operations (3 credits)
 - Integrative Project (3 credits)

<https://emergencymanagement.uic.edu/>

A list of additional certificate programs is available at <https://training.fema.gov/hiedu/collegelist/emstandalone/>. One important aspect of this list however, is that it focuses more on emergency management and less on planning.

C. Curricular coherence and sufficiency

Please see Annex 5 Student Profile Alignment with Conceptual Framework and Curriculum Design.

D. Educational methodologies

Education methodologies and techniques are three: conference, laboratory and seminar. Conferences are useful in deploying theoretical as well as conceptual frameworks, in particular in the case of disaster planning and related issues like risk and vulnerability, as well as mitigation, among others (core courses and electives). Laboratories will be useful in teaching methods and techniques, in particular those related to spatial analysis

(core course). The EGP has a state-of-the art laboratory, including hardware, software and data for spatial analysis and imagery, described in section XII of this proposal. Finally, seminars are flexible enough to serve as a platform for developing emerging research themes in disaster planning, as well as show casing professional best practices (core course).

The Certificate's curriculum integrates information technology in various ways. One is directly through the methods and techniques course where students will work with electronic information collection instruments, geographic information systems, and statistics software. Furthermore, students will be using learning platforms for hybrid and on-line courses. Finally, all students most use communication and presentation software, as well as word processing, search engines and virtual drives.

E. Course Syllabi

All of the courses are new, and respective syllabi are available in Annex 5, Syllabi.

VIII. Admission, Registration, and Graduation

A. Admission requirements

The Certificate will be offered with two options:

1. Joint Master's Program in Planning and Graduate Certificate - This option is aimed at regular students who are enrolled in the EGP Master's Program. To enroll in the Certificate must have 50% of the approved master's courses and have a minimum academic index of 3.0.

In this case, the student will request admission to the Certificate through an internal form of the School, containing evidence of the courses approved at the time of the application, to be evaluated by the Admissions Committee with the approval of the student's academic mentor.

2. Certificate Only - This option is aimed at EGP graduates and to graduate students or people with masters in related areas planning, for example, architecture, engineering, law (Juris Doctor), public administration, geography, sociology, social / community psychology, geology, environmental sciences, or social work, among others. This option requires that those interested apply for admission to the EGP specifically for the Certificate, and must have completed their master's degree with an academic index of at least 3.0. For those interested who do not have a background in Planning, a compendium introductory course (remedial course) will be offered that must be approved with A or B before the Certificate begins.

In this case, the admission will require complementing the application for admission on the platform of the Deanship for Graduate Studies and Research of the Río Piedras Campus (Applyyourself). This should include the student's credit transcript, evidence of completed degrees, and one recommendation letter. The exam EXADEP (Examen de Admisión a Estudios de Posgrado) will not be required since the student has already approved a master's degree or equivalent.

B. Enrollment projections

It is projected that every year, at least 10% (8-12 annually) of students enrolled in the Master's Program in Planning will be admitted. In addition, demand for this certificate has been identified in the Community Development Division of FEMA, in central government agencies and municipalities. In municipalities and state agencies, there must be at least one person certified by dependency (78 in municipalities; 150+ in the central government), and in the case of FEMA, some should have this type of certification (15+). Finally, the last hurricanes evidenced the fundamental role that nonprofit organizations, community organizations, and faith groups have played in recovery. That is why we anticipate that they also have an interest in this program. We project an enrollment of 46 in total for the first (23) and second year (23) and 51 from the third year onwards. (See Annex 6, Recruitment Plan)

C. Academic requirements to obtain the Certificate degree

Enrolled students may complete the certificate in three consecutive semesters. The student must approve sixteen credits with A, B or C grade and a GPA of 3.00 or higher.

IX. Faculty

A. Faculty Profile

The EGP has four full-time professors in its general staff; four tenured and one affiliated on a full-time annual contract as a research professor in the College of Social Sciences. All full-time faculty members have a doctoral degree. Of the teaching staff, one professor has a professional license in Planning, and another one has a license in professional Geology.

| Name | Academic Background, Specialty Area, Institution, Year the academic degree was conferred | Rank, Instructor, Assistant, Associate, or Full Professor | Type of position – Full-time (TC) or Part-time (TP) | | Main Institutional Unit or Department Affiliation of the Faculty | Years of Experience in the Institution | Title of the courses offered or that will be offered | Academic Load | Num. of course preparations | Other administrative or research and innovation activities | Publications Last five years |
|-----------------------------|--|---|---|----------|--|--|--|---------------|-----------------------------|--|---|
| | | | Permanent or tenure track | Contract | | | | | | | |
| Norma Peña Rivera | <p>2005, Ph.D. Public Policy Analysis, Specialty: Transportation, University of Illinois - Chicago, Illinois USA</p> <p>2000, M.P. University of Puerto Rico - Río Piedras, San Juan Puerto Rico</p> <p>1996, B.B.A. Management and Marketing, Associate Degree in Environmental Studies Loyola University - New Orleans, LA</p> | Professor | T | | EGP | 12 | Introduction to the Theory and Practice of Planning (Pre-requisite, remedial) | 3 cr. | 1 | 12 | 2 (book chapters In print); 1 Conference Proceedings) |
| Maritza Barreto Orta | <p>1997, Ph.D. Marine Sciences (Geology) University of Puerto Rico - Mayaguez,</p> <p>1997, M.S. Marine Sciences, (Geology) University of Puerto Rico - Mayaguez</p> <p>1991, B.A. Geography, University of Puerto Rico - Rio Piedras</p> | Professor | T | | EGP | | Riesgos y Amenazas Naturales (Core) | 6 cr. | 1 | 6 | 5 peer reviewed papers |

| | | | | | | | | | | | |
|-------------------------------------|--|------------------------------|---|--------|--------------------------------------|----|---|-------|---|---|--|
| Aurelio Castro Jiménez | 2006, M.B.A. Information and Management Systems, University of the Sacred Heart, San Juan, PR 1987, B.S. Chemistry and Environmental Sciences University of Puerto Rico - Río Piedras | Instructor | | F T | EGP | | Disaster Research Techniques (Core) | 6 cr. | 1 | 6 | 6 professional Presentations at conferences |
| Criseida Navarro Díaz | 2005, Ph.D. Massachusetts Institute of Technology Cambridge, MA 1999, M.P. Urban Planning, University of Puerto Rico - Río Piedras B.S. Architecture Massachusetts Institute of Technology Cambridge, MA | Professor | T | | EGP | 14 | Regulatory Instruments (Core) | 9 cr. | 1 | 3 | 2 professional Presentations At conferences; |
| Jennifer M. Santos Hernández | 2013, Ph.D. Sociology, University of Delaware, Newark, DE Specialties: 1)Collective behavior, social movements, and disasters, 2) Race and Ethnicity 2007, M.A. Sociology, University of Delaware, Newark, DE 2004, B.A. Magna Cum Laude, Sociology, University of Puerto Rico - Mayaguez | Assistant Research Professor | P | F T | Facultad de Ciencias Sociales, UPRRP | 5 | Disasters and Emergency Management Theory and Practice (Core) Development y social vulnerability to disasters (Elective) | 6 cr. | 2 | 6 | 1 book chapter, 2 peer reviewed articles, 1 professional report (plan) |

| | | | | | | | | | | | |
|---------------------------------------|---|--|--|--------|------------------------------|--|---|-------|---|---|---|
| Prof. Robert Olshansky | 1987, Ph.D. Urban and Regional Planning, University of California - Berkeley | | | P T | Retirado de Universidad de I | | Professional Seminar: Population Displacement and Relocation | 1cr. | 1 | 0 | 10 papers |
| Prof. Raúl Santiago Bartolomei | 2019, Ph.D. Urban Planning and Development, University of Southern California 2012, M.P. Master of Planning University of Puerto Rico, Río Piedras 2008, Master of Engineering, Cornell University 2007, B.S. Civil Engineering University of Puerto Rico - Mayaguez | | | P T | EGP | | Advanced Reading in Planning: Community Economic Development Theory | 3 cr. | 1 | 0 | 5 peer reviewed papers, 8 professional papers, 3 peer reviewed paper under revision |

B. Faculty Development Plan

Every permanent professor and full-time professors at UPRRP who teach core courses will attend at least to one academic or professional conference related to planning or disasters every year, to either present their research or participate. Funding will come from respective on-going research projects or complemented with funding from the Deanship of Graduate Studies and Research subject to availability. Every professor is responsible for requesting such funding. (See Annex 7 Faculty Development Plan)

X. Program Administrative Structure

The program will be affiliated to the Graduate School of Planning (EGP), Dr. Salvador M. Padilla Escabí. The EGP is located under the Deanship of Academic Affairs. The **academic administrator** of the program will be Dr. Jenniffer Santos Hernández. Currently, Dr. Santos has an appointment as full-time assistant research professor on an annual contract at the Center for Social Research of the College of Social Sciences and serves as acting director of the Social Sciences Magazine of the Faculty of Social Sciences of the UPR-RP. At CIS, she collaborates on three research projects: the National Science Foundation (NSF) Urban Resilience to Extremes Sustainability Research Network, the NSF Includes Design and Development Launch Pilot: Capacity Building in Disaster Research for Scholars from Underrepresented Groups

(SURGE), and the Environmental Protection Agency (EPA) College / Community Underserved Partnership Program. Dr. Santos is a co-principal investigator, along with Dr. Pablo Méndez Lázaro (UPR-RCM), of the Network for Sustainability Research on Urban Resilience to Extreme Events (UREx SRN) in the city of San Juan. UREx SRN is one of only three sustainability research networks subsidized by the National Science Foundation in the United States.

Dr. Santos is an external evaluator of the SURGE INCLUDES program, which is an initiative to include communities of experts and discoverers underrepresented in the United States by Dr. Frances Córdova, Director of NSF. After Hurricanes Irma and María, Dr. Santos began an initiative entitled 'Helping Affected Communities Engage in Resilience (HACER), under the College / Community Underserved Program of the Environmental Protection Agency (EPA), which facilitates planning exercises participatory to promote resilience in communities of San Juan. In addition to her research projects, she collaborates in other initiatives that lead the interdisciplinary discussion in the area of disaster research and climate change. Dr. Santos collaborates with the Scholarly Borderlands Project of the Social Science Research Council (SSRC). The SSRC Scholarly Borderlands Project is an incubator for research projects that ask innovative questions, develop new theoretical frameworks, and seek to generate innovative solutions. Dr. Santos is part of a select group of social scientists that make up the SSRC's steering committee on climate change research. She also serves as a disaster specialist on the helm committee of the Post-María Children and Youth Task Force of the Youth Institute.

Dr. Santos is a specialist in the area of disasters and has a proven track record in obtaining external funds. Dr. Santos is a graduate of the University of Delaware, where she stood out as a research assistant in several projects of the prestigious Disaster Research Center; the oldest international research center dedicated to the study of disasters. As a graduate student, she was awarded a research position at the Oak Ridge National Laboratory of the United States Department of Energy and was part of a select group of five researchers funded by a Laboratory Directed Research and Development Grant (LDRD) with a budget of \$ 780,000 to develop the 'Population Resettlement Under Climate Change Scenarios' project. In 2013, she completed her doctorate and accepted a position in the Campus as an auxiliary researcher at the Center for Social Research of the Faculty of Social Sciences. In the Campus, she has received grants from the National Science Foundation (\$ 171,000), from NOAA (\$ 50,000), from DRNA (\$ 40,000 and \$ 30,000), FEMA (\$ 1.5 million), among others. She is currently collaborating on a proposal for the NSF Alliance call with a budget request of approximately \$ 250,000. It is important to highlight that all the aforementioned projects contribute to the development of participatory education and social planning tools, focused on climate change and extreme events, at the organizational / institutional and community level. Dr. Santos has offered courses at the Graduate School of Planning related to research methodologies, social vulnerability, disasters and emergency management, transitions to sustainability and migration and marginality, among others. Dr. Santos's doctoral degree and her experience in planning projects and related areas meet the requirements of the Planning Accreditation Board, which has accredited the EGP program from 1971 continuously until 2022.

The academic administrator of the Certificate tasks include the following:

- Schedule certificate courses every semester
- Identify and recommend teachers resources to offer professional seminars
- Report to the Director of the EGP progress and achievements of the Certificate

- Prepare the annual budget to integrate the EGP-Master's
- Prepare a 5-year Certificate development plan
- Promote the Certificate for recruitment purposes in close collaboration with the EGP Student Affairs Officer

The administrative staff, in support to the academic administrator, includes the personnel currently assigned to the EGP. This consists of an Administrative Officer III, Student Affairs Officer II, and the Director of the Master's program. The Administrative Officer has the experience and expertise to carry out the most pressing tasks for the Certificate, in particular, the hiring of external teachers and procedures related to teacher compensation when applicable. It is not contemplated that this implies a significant increase in the tasks of the Officer. The Student Affairs Officer will have among its tasks to support the academic administrator of the certificate in the recruitment of students by integrating materials and orientations to the initiatives carried out for the master's degree, such as open houses, graduate fairs, and social media and online advertising. Likewise, the Officer will offer support in the enrollment and graduation procedures of the Certificate participants, which are expected to be part of the master's degree students in planning.

XI. Information Resources

The EGP has extensive and updated information and technology resources to meet the needs of its students and teachers. These are mainly found in the library, the computer lab, and the Coastal Research and Planning Institute of Puerto Rico (COREPI). All three play a crucial role in teaching and research efforts in the EGP.

Library Resources

The library offers the following services: circulation of information resources, loan reservations for teachers, loans between libraries, consultation and information directly or by phone, individual and group guidance and instruction on the library, its catalog and online databases, support for teacher research and document reproduction. The library has continued to strengthen its collection by acquiring information resources to support the Graduate School of Planning curriculum. A total of eighty-three (83) monographic resources and copies of one hundred sixty-two (162) printed journals were added. Of the total monographic resources added to the collection, nine of them are theses of EGP students. With these new acquisitions, the library now has a collection of 18,323 monographic titles. To further strengthen the collection, the Library Director recommended the acquisition of a total of twenty-five (25) additional titles. The total budget of the library for information resources was \$ 48,210.12 (excluding the librarian's salary and space rental), distributed as follows: printed books, \$ 1,462.81, e-books, \$ 884.90, printed and electronic magazine subscriptions \$ 45,862.41.

The library also has fourteen (14) computers, eight (8) of which are for use by students and teachers. Through these computers, users can access the online catalog databases available on the Library System website, as well as the Internet. There are also two computers available at the

service desk, one for loan information resources through the Horizon program, and another for the referral service. The four (4) remaining computers are for administrative use, which is used by the staff working in the Library.

Computer Lab

The Computer Lab has also been designated as a data center for the United States Census. A significant volume of data from the United States Census is available, not only to students and teachers but also to members of a wider community who may want access to any information from the United States Census. Approximately 200 users a year use the EGP laboratory to access data from the US Census. This number is decreasing due to new Internet services provided by the United States Census Bureau.

The COREPI center is where scientific research and planning projects are carried out on the issue of coasts for Puerto Rico and the Caribbean. Since its founding in 2014, the Principal Investigator of the laboratory has obtained external funds from agencies such as the National Aeronautics and Space Administration (NASA), National Oceanographic and Atmospheric Administration (NOAA), Department of Natural Resources (DRNA) for an approximate total of 12 million dollars with which work has been carried out on issues of coastal erosion, coastal flooding, hurricane impacts on the coasts, identification of coastal planning interventions among others. Recently FEMA joined. As part of the work, the laboratory offers training to students in the field of coastal risks. The laboratory has as collaborators the personnel of the National Meteorological Service of San Juan, the Federal Geological Service of the United States (USGS).

XII. Teaching, Research, and Service Infrastructure

A. Installations, laboratories and teaching support equipment

In January 2007, the EGP was moved to its new facilities located in the Plaza Universitaria Building. The EGP now occupies two floors (PH on the seventh floor and the sixth floor) with ample space for classrooms, offices, a library, a computer lab with multiple classrooms and storage spaces, and a conference room (shared with other schools on a separate floor) for guest speakers, forums and meetings, with a capacity of up to 150 people. In addition, its center is located on the 2nd floor of North Tower. The building has parking and direct access to the urban train system.

The Internet connection from the library, offices, and classrooms is available through Ethernet and Wi-Fi networks. This is undoubtedly one of the best facilities on the UPR-RP campus. Each classroom has recently been equipped with a permanent projector and screen.

Library: The Dr. Rafael Picó Planning Library is located on the sixth floor of the Central Tower of the University Square, opposite the main entrance of the Río Piedras campus. It has ample, comfortable, and efficient space for its collection and its users, which include students and professors of the EGP, as well as other schools and 66 departments. It also provides an excellent environment for study and research. It has three study areas that include tables, chairs, cubicles,

and computers, with a total capacity of approximately 100 people. It also has a group study room (with capacity for 6 people), a multipurpose room (for courses and small events, with capacity for 35 people), the Rafael Picó collection room and a photocopy area. All areas have wired and wireless Internet connection. The library provides accommodation for users with special needs and physical facilities that comply with the ADA Act. The library is run by a professional librarian, Mr. Miguel A. Santiago Rivera, who has a Master's Degree in Library Science from the Graduate School of Information Science and Technology of the UPR-RP. Students and the faculty of the EGP can also use any of the other 18 libraries and collections of the UPR-RP Library System, the most extensive collection of bibliographic and related resources in Puerto Rico. The UPR-RP Library System contains special collections that are unique to Puerto Rico.

Computer Laboratory: The EGP Pier Luigi Caldari Computer Laboratory was founded by Professor Caldari in 1983, and since then is kept updated to cultivate the environment of constant change in information, telecommunications, and Internet services. The Laboratory, located next to the EGP library, serves the more than 100 students and members of the School of Planning and is also open to the academic community of the Río Piedras campus. The Laboratory facilities offer a complete infrastructure to support the computational needs of the students. These facilities have seven different classrooms, two of them serve as offices, and the other five are to provide services to students. Room 6018, serves as an office occupied by the full-time Director of the Computer Lab, and Room 6019, is occupied by five lab assistants.

The computer services provided to graduate students are divided into two main laboratories; Room 6014, which is dedicated full-time to offer services to students and Room 6015 which is dedicated to students and teachers who need specialized technology. The State Data Center affiliated to the U.S. Census Bureau is housed in Room 6008. The last two classrooms, 6016 and 6017, offer research space, equipment to digitize, and a plotter printer. The Pier Luigi Caldari Computer Laboratory is open Monday through Thursday from 9:00 AM to 9:00 PM. On Fridays and Saturdays, the laboratory is open from 9:00 AM to 6:00 PM. This schedule meets the hours of access to the main building. Students may also have access to other computer labs on campus, but access may be limited to students of those other programs. The closest alternative computing center available to planning students is the EGP library.

Computer lab resources: The lab has specialized software and mobile equipment to support the EGP curriculum. The laboratory facilities have two main rooms fully equipped with the latest technology. Computers in the laboratory facilities are connected to the main Ethernet network and have a speed of 1.0 Gigabits. The EGP, as well as the rest of the building, has full wireless connectivity without blackout zones. All laboratories, offices, classrooms and the library also have Ethernet cable connections. The Graduate School of Planning's computer network has a segmented network with a dual Dell Storage Server (2). The storage server has one (1) Terabyte of Geospatial data that includes: Ikonos satellite images of the entire island, 2003 aerial photography of the entire island, data from the cadastre of the CRIM office, data from the Department of Natural Resources, and US Census Data for 1990, 2000 and 2010. Room 6014, a multi-user computer lab, contains the following equipment: Twelve (12) Dell workstations, DVD recorders, two (2) scanners, and two (2) laser printers. Room 6015, the geospatial data laboratory, has the following equipment: Thirteen (13) Dell Workstation computers, DVD recorders, projectors, and multimedia systems, and an electronic whiteboard. The 6016, 6017 and 6019 scanning rooms feature the following

equipment: three (3) Dell computers, two (2) large format plotters, three (3) GPS GEOExplorer 2005 precision sub metric series, three (3) GPS Juno Medium precision series, one (1) Toshiba tablet with ink technology, two 50-inch LCD TVs, and a mobile stand. Room 6008, the affiliate of the State Data Center of the Census Bureau, has the following equipment: One (1) Dell computer, one (1) laser printer, and CD-ROM equipment. All hardware equipment has connectivity to the Internet and the UPR computer network. Printing services are available on the EGP's computer network for public access. There are five computer projectors to support the teacher in the 7th-floor classrooms and a multipurpose room that includes state-of-the-art videoconferencing. The latest multimedia acquisition includes high-resolution projection with sound for all seventh-floor classrooms and the 6015 computer lab. The latest software acquisitions consist of recent commercially available programs for professionals. The data storage server provides the license for cutting-edge geospatial software in a multi-user environment and cloud services. In terms of operating systems, all computers use Windows 7. Windows Server 2005 is installed on the data server. The application programs are Microsoft Office 2010 educational version (ACCESS, EXCEL, WORD, POWERPOINT), Norton Antivirus and others, Microsoft Publisher, Microsoft Project, GIS Software, and QGIS open source. Statistical software programs include Stata and Eviews. Remote sensing software includes ENVI and Erdas (earlier versions for compatibility), Internet Explorer, as well as multiple open source products and programs. For GIS software, we have 25 licenses for each of the following: ArcGIS ArcEditor, ArcGIS Spatial Analyst, ArcGIS Network Analyst, ArcGIS 3D Analyst, ArcGIS Data Interoperability; 10 ENVI ITT image processing licenses and mobile data collectors in the ArcPad field.

The computer lab has played a key role in the implementation of the EGP curriculum. Currently, graduate planning courses taught in this computer installation include Computer and Information Systems in Planning, Remote Perception, and Geographic Information Systems. Most of the remaining courses taught at the Graduate School of Planning require, as part of their courses, frequent use of the computer lab facilities. The computer lab plays an essential role not only as an instructional facility and data center but also as a research facility. Students are able to acquire computer-related skills necessary for research. The laboratory also plays an important role in several research projects of professors and students of the EGP. Some of the resources commonly used in the research are high-precision GPS, medium-precision mobile GPS, geospatial database, aerial images and photography, specialized GIS and remote sensing software and statistical package software.

XIII. Student Services

A. Student support systems and services

The EGP has an Office (and Official) of Student Affairs which provides assistance to students in the enrollment process and continuously assesses their academic progress. The Student Affairs Official recently instituted a Mentoring Program to increase retention and reduce the time to graduate from students. Each student completes a questionnaire, is evaluated based on their interests and academic-professional goals, and is assigned the mentor with whom they have the highest affinity. The mentor monitors the student's academic progress, recommends courses,

internships, professional experiences, among others, and approves enrollment. Students enrolled in this Certificate Program will have access to these services.

B. Financial aid

Students may request for financial aid in the form of student loans only.

XIV. Catalogue and Dissemination

As established by the guidelines for new programs, the following catalog and disclosure information is found in Annex 4 Catalogue and Dissemination:

- Program description, graduate profile and curricular sequence
- Employment opportunities and further studies
- Admission and graduation requirements
- Special Quotas
- Financial aid available
- Senior officers and contact persons
- Faculty, academic degrees, and institutions where they obtained the degree
- Physical facilities
- Main services (See Annex 8: Catalogue and Dissemination)

XV. Budget Plan

The budget plan aims to create synergy between the master's degree and the Certificate, inserting it into the EGP budget with a minimum impact on expenses, and providing new income for the School. The detail for each line of the budget is found in the narrative available in Annex 9, Budget Narrative.

The expenses are minimal and are directly linked to the hiring of part-time teachers or compensations for the staff teachers to offer the courses totaling \$ 9,953 annually. Counting on an enrollment scenario of 46 students in the first and second year, and 51 in the third year, the income generated by the Certificate is higher than the investment. Based on this enrollment projection, the first and second year, the income would be \$ 45,675 respectively, and the third year \$ 50,925. The income is three times greater than the expenses, so the program is expected to be self-sustaining. These estimates are conservative to the extent that they do not include the additional income that the Campus would receive for the courses that hybrids will be offered, which entail a higher cost to the student. (See Annex 9: Budget Narrative)

XVI. Assessment Plan

The Student Learning Assessment Plan will be integrated into the OLAS (Online Learning Assessment System) platform of the Campus. OLAS domains for graduate-level will be used as they respond to the Certificate's graduate profile. These include the following:

- Research and creation
- Critical thinking
- Discipline Content
- Information competences
- Technology integration
- Social responsibility

A rubric will be created based on this profile by developing new criteria under the OLAS domains. We will submit the request to the OEAE (Office of Student Learning Assessment) for new criteria once the proposed program is approved by all relevant bodies.

The Certificate Evaluation will include formative and summative evaluation components; formative evaluation will take place in each course and a summative evaluation will take place every year and a half for the first three years. Formative evaluation at the beginning of each semester, faculty members will administer a diagnostic test, aligned to the course objectives and learning goals for each course, to examine student proficiency. Faculty members will employ different tools to assess student progress and teaching effectiveness during the semester; including a mid-year feedback instrument to assess student understanding of the content of the course and gather feedback to inform subsequent course meetings and activities. A summative evaluation will be administered by faculty members at the end of the semester to examine course learning outcomes. Faculty members will produce a report of the results of each of the formative and summative evaluation instruments that includes changes made throughout the semester, emergent challenges, and transformative actions to address the challenges identified. At the end of the first cohort, and successive, the faculty will meet to discuss the results and transformative actions.

The main objective is to maintain an adequate minimum enrollment of 23 students (50% of projected students), and an ideal of 46 students. The Student Affairs Official will count students enrolled each semester and make summative graphs to carry out the analysis. In addition, each course will be assessed individually by students through a standardized online questionnaire, and reports generated by the platform will automatically be used (Google Forms). The Academic Affairs Committee of the EGP will examine the results and communicate them to the Director of the Certificate and the School to take actions corresponding to the modification of courses, executives of the teachers and content of the Certificate curriculum in general. (See Annex 10, Student Learning Assessment Plan).

XVII. Development Plan

Greatest challenges for the program’s development are related to the financial stability of the UPR. Institutional support will be important to recruit new professors for the EGP, following its Recruitment Proposal 2019 submitted to Dean of Academic Affairs, based on EGP’s Five-year Development Plan.

- Criteria to establish program priorities and to assign resources are the following:
- Guarantee of the academic offer to enrolled students
- Assignment of full-teaching load to EGP tenured and tenure-track professors first
- Flexibility of the academic offer based on the needs of professional students

The Development Plan shown in the next table, focuses on recruitment of students; adding academic resources on disaster planning for the library collection—as part of regular acquisition efforts; assuring acceptable graduation rates following Cert. 51; evaluating the academic offering and adding on-line courses. These efforts will be in line with accreditation, which will be tied to those of the Master of Planning Program, which are due next 2022, of the Graduate School.

| Graduate School of Planning Dr. Salvador M. Padilla Escabí | | | | | |
|---|---|--|----------------------------|----------------------|-------------------------------------|
| 2020-2025 Post-baccalaureate Academic Certificate in Disaster Planning 5-Year Development Plan | | | | | |
| Goals | Objectives | Activities | Expected Date of Execution | Resources | Evaluation |
| Goal 1: Recruit professional students in and outside of the UPR system interested in disaster planning from diverse professional backgrounds | | | | | |
| | 1.1 Attract between 40 and 50 students every year | Open houses; promotion at government agencies and municipalities and graduate fairs, as well as social media | Every semester | EGP Student Affairs | Number of students in the program |
| | 1.2 Outreach to professionals who work with disaster planning | Collaborate with collegiate professional associations to distribute promo to their enrollment: SPP, CAPPR, | Fall 2020 | Certificate Director | Letters of invitation and responses |

| | | | | | |
|--|---|--|-----------------------|--|--------------------------------------|
| | | CIAPR, CAPR, CTPSPR. | | | |
| | | Develop a mailing list of potentially interested candidates | Spring 2020 | Certificate Director and EGP Student Affairs | Mailing list |
| Goal 2: Graduate students in a timely manner | | | | | |
| | 2.1 Graduate at least 60% of the 1.5-year students' cohort | Student orientation and mentorship | Every semester | Certificate Director and EGP Student Affairs | Graduation Rates |
| Goal 3: Increase the EGP library collection of books and journal resources on disaster planning | | | | | |
| | 3.1 Identify necessary book and journal resources | Submit all Certificate syllabi to EGP Library | Every semester | Certificate Director | List of resources |
| | 3.2. Obtain between 5 and 10 resources every year | Submit list of resources to EGP Library | Every Spring semester | UPRRP Library System | Number of books and journals' access |
| Goal 4: Improve the Certificate's academic offer constantly | | | | | |
| | 4.1 Revise core courses every year in order to keep them updated | Course evaluations by students and EGP Academic Committee review | Every semester | Certificate and EGP professors | Evaluation forms |
| | 4.2 Complete 3-year Student Learning Assessment Plan and implementation | Assessment Plan | Fall 2020 | Certificate and EGP professors | OLAS Reports |
| | 4.2 Convert introductory planning course to an on-line course during the first two years of the Certificate | Professors' certification for on-line teaching | Spring 2020 | Certificate professors | Availability of on-line course |
| | 4.3 Convert at least one of the elective courses | Submit new syllabi to DAA | Fall 2021 | Certificate professors | Availability of on-line course |

| | | | | | |
|--|------------------------|--|--|--|--|
| | into an on-line course | | | | |
|--|------------------------|--|--|--|--|

XVIII. Additional Information

This new certificate is unique in Puerto Rico, and FEMA-- the largest disaster-related federal agency—has recognized the certificate as an important initiative given contextual disaster recovery of the Island, and its vulnerability to natural and other types of disasters. Evidence of such recognition is FEMA’s letter of support, which is included in Annex 2.

The Certificate Program in Disaster Planning is also nurtured by an advisory board of leading scholars in the disaster research community that are specifically committed to support the new certificate by reviewing the materials produced and by sharing information about opportunities to advance and further develop the academic program.

- Kathleen Tierney, Professor Emeritus and Former Director, Natural Hazards Center, University of Colorado Boulder
- Benigno Aguirre, Professor Emeritus of Disaster Science, Disaster Research Center, University of Delaware
- Terri Norton, Associate Professor of Civil Engineering, Bucknell University
- Jessica Jensen, Chair, Department of Emergency Management, North Dakota State University
- Judith Mitrani-Reiser, Director of Disaster and Failure Studies, U.S. National Institute of Standards and Technology
- Sarah Hamideh, Assistant Professor of Community and Regional Planning, College of Design, Iowa State University

XIX. Suggested Information Sources

Additional sources of information have been integrated into the narrative as electronic links. Other supporting documentation is available in various annexes. Furthermore, the document makes references to various certifications and regulations, as well as institutional plans, throughout the proposal, which are cited. Following are cited sources and documentation.

CRED. (2018). *Natural Disasters in 2017*. Brussels: Center for Research on the Epidemiology of Disasters. Available at: https://cred.be/sites/default/files/adr_2017.pdf.

Johnson, L. & Olshansky, R., (2016). *After Great Disasters: How Six Communities Managed Community Recovery*. Lincoln Institute of Land Policy, Cambridge, MA.

Schwab, J., (2019). *Planning Systems for Natural Hazard Risk Reduction*. *Oxford Research Encyclopedia of Natural Hazard Science* (oxfordre.com/naturalhazardscience).

PAB Site Visit Report, Final Report. April 7, 2017.

Letter from Bruce Knight (PAB) to Chancellor Luis Ferrao, October 28, 2017.

XX. Annex 1: Graduate School of Planning Accreditation Letter

October 28, 2017

Luis Ferraro, Ph.D.
Acting Chancellor
University of Puerto Rico
Rio Piedras Campus
P.O. Box 23305
San Juan, Puerto Rico 00932

Dear Dr. Ferraro:

On behalf of the Planning Accreditation Board (PAB), I am pleased to inform you that the Board acted at its October 14, 2017 meeting to accredit the *Master in Planning* degree at the University of Puerto Rico for a 5-year term, effective January 1, 2018 to December 31, 2022. A certificate designating this accreditation term will be mailed under separate cover.

In its report the Site Visit Team noted many areas of excellence; the Program should be proud of its accomplishments. More specifically, the Site Visit Team found: an accomplished, collaborative and engaged faculty and enthusiastic student body; and an excellent and robust student learning and outcomes assessment process.

Given this action, the Program will be scheduled for its next accreditation review during the 2021 – 2022 academic year; the Self-Study Report will be due in 2021. PAB reserves the right to change this to an earlier time as a result of new or additional information, changes in the activities of the Program, or changes needed in the accreditation review schedule. The Program will be notified of any change in advance of the time of the next review.

This accreditation term carries a condition that the Program submit a Progress Report on July 1, 2020, detailing updated information on the areas of accreditation outlined below. If the Board finds sufficient evidence in that Progress Report to bring those areas into substantial compliance with the standards, the accreditation period may be extended by an additional two years. This would affect the schedule outlined above. The maximum term of accreditation is seven years.

In its future Progress Report, the Program should provide clear evidence of compliance with the following standards and criteria.

Standard 2 / Students

Criterion 2D / Student advising, services, and support

"The Program shall provide students with competent academic advising, progress appraisal, and career guidance, as well as access within the institution to any personal counseling that students might need. Furthermore, the Program or its institution shall provide students with career services that assist students in securing suitable internships and jobs. The Program shall

also support its students by providing them with financial aid opportunities that are sufficient in number and amount to achieve the Program's aspirations for a well-qualified and diverse student body. The Program shall publish its criteria for the allocation of such financial aid. "

The Site Visit Team assessed this criterion as partially-met citing the inconsistent implementation of the mentoring and advising procedures.

The Board concurs with this assessment. The Progress Report should provide evidence of consistent and competent academic advising and career guidance.

Standard 3 / Faculty

Criterion 3E / Research and scholarship

"Faculty will engage in research, scholarship, and/or outreach reflective of the stage of their careers and the mission and expectations of the university."

The Site Visit Team assessed this criterion as partially-met citing inconsistent faculty research and scholarship.

The Board concurs with this assessment. The Progress Report should provide evidence of consistent faculty productivity.

Standard 4 / Curriculum and Instruction

Criterion 4A.1.c / Knowledge: Planning Law

The Program shall offer a curriculum that teaches students the essential knowledge, skills, and values central to the planning profession [including] appreciation of the legal and institutional contexts within which planning occurs.

Criterion 4A.2.c / Skills: Quantitative and Qualitative Methods

The Program shall offer a curriculum that teaches students the essential knowledge, skills, and values central to the planning profession [including] data collection, analysis and modeling tools for forecasting, policy analysis, and design of projects and plans.

Criterion 4A.2.d / Skills: Plan Creation and Implementation

The Program shall offer a curriculum that teaches students the essential knowledge, skills, and values central to the planning profession [including] integrative tools useful for sound plan formulation, adoption, and implementation and enforcement.

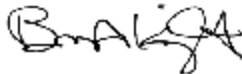
The Site Visit Team assessed these three curriculum sub-components as partially-met, citing: insufficient coverage of planning law; limited skill development of modern quantitative and qualitative methods; and inadequate coverage of plan making in the curriculum.

The Board concurs with these assessments while recognizing the Program's efforts in addressing these issues through a curriculum proposal currently awaiting university approval. The Progress Report should provide evidence that these knowledge and skill components are being adequately presented within the required curriculum.

review to re-consider the Program's accreditation status. Additional information about substantive changes is available on our website (www.planningaccreditationboard.org).

PAB appreciates the commitment and dedication to quality planning education demonstrated by your participation in the accreditation process. If you have questions or concerns, do not hesitate to contact PAB Executive Director Shonagh Merits.

Sincerely,



Bruce A. Knight, FAICP
Chair
Planning and Development Director
City Of Champaign
102 N. Neil Street
Champaign, IL 61820-4018
bruce.knight@champaignil.gov

Copies:

Leticia Fernandez, Ph.D., Acting Dean of Academic Affairs
Pedro J. Rodriguez-Esquerdo, Ph.D., Dean for Graduate Studies and Research
Carmen M. Concepcion, Ph.D., Director, Graduate School of Planning

**PLANNING ACCREDITATION BOARD SITE VISIT REPORT
Final Report 7 April 17**

Graduate School of Planning

University of Puerto Rico, Río Piedras

Master of Planning

5-8 February 2017

SITE VISIT TEAM MEMBERS:

**Chair: Bruce Stiftel, FAICP
Professor and Chair
Georgia Institute of Technology**

**Second Educator: Ivonne Audirac
Associate Professor and Interim Program Director
University of Texas, Arlington**

**Practitioner: Ralph Willmer, FAICP
Principal Planner
Metropolitan Area Planning Council
Boston, MA**

Part 1 – Compliance Checklist

| Standards and Criteria | | Met | Partially-met | Unmet |
|------------------------|---|-----|---------------|-------|
| 1. | Mission and Strategic Plan | | | |
| 1.A. | Strategic plan | X | | |
| 1.B. | Mission statement | X | | |
| 1.C. | Program goals | X | | |
| 1.D. | Measurable objectives | X | | |
| 2. | Students | | | |
| 2.A. | Student quality | X | | |
| 2.B. | Student diversity | X | | |
| 2.C. | Size of student body | X | | |
| 2.D. | Student advising, services, and support | | X | |
| 2.E. | Student engagement in the profession | X | | |
| 3. | Faculty | | | |
| 3.A. | Faculty quality | X | | |
| 3.B. | Faculty diversity | X | | |
| 3.C. | Faculty size | X | | |
| 3.D. | Engagement with students | X | | |
| 3.E. | Research and scholarship | | X | |
| 3.F. | Professional involvement and community outreach | X | | |
| 3.G. | Professional development | X | | |
| 4. | Curriculum and Instruction | | | |
| 4.A. | Required knowledge, skills, and values of the profession* | | X | |
| 4.B. | Areas of specialization and electives* | X | | |
| 4.C. | Instructional delivery and scheduling | | X | |
| 4.D. | Facilities | X | | |
| 4.E. | Information and technology | X | | |
| 5. | Governance | | | |
| 5.A. | Program autonomy | X | | |
| 5.B. | Program leadership | X | | |
| 5.C. | Communication | X | | |
| 5.D. | Faculty and student participation | X | | |
| 5.E. | Promotion and tenure | X | | |
| 5.F. | Grievance procedures | X | | |
| 6. | Program Assessment | | | |
| 6.A. | Faculty research and scholarly contributions | X | | |
| 6.B. | Student learning and achievement | X | | |
| 6.C. | Student retention and graduation rates | | X | |
| 6.D. | Outcomes | X | | |
| 7. | Progress | | | |
| 7.A. | Progress towards goal attainment | X | | |
| 7.B. | Programmatic changes | X | | |
| 7.C. | Strategic issues for the next 5-7 years | X | | |
| 7.D. | Public Information | X | | |

*Detailed assessment of the curriculum is located on the following page.

Part 1.A. – Curriculum Map Assessment

| | | Met | Partially-Met | Unmet |
|-------------|--|-----|---------------|-------|
| 4. | Curriculum and Instruction | | | |
| 4.A. | Required Knowledge, Skills and Values of the Profession | | | |
| A1 | General Planning Knowledge | | | |
| | a) Purpose and Meaning of Planning | X | | |
| | b) Planning Theory | X | | |
| | c) Planning Law | | X | |
| | d) Human Settlements and History of Planning | X | | |
| | e) The Future | X | | |
| | f) Global Dimensions of Planning | X | | |
| A2 | Planning Skills | | | |
| | a) Research | X | | |
| | b) Written, Oral and Graphic Communication | X | | |
| | c) Quantitative and Qualitative Methods | | X | |
| | d) Plan Creation and Implementation | | X | |
| | e) Planning Process Methods | X | | |
| | f) Leadership | X | | |
| A3 | Values and Ethics | | | |
| | a) Professional Ethics and Responsibility | X | | |
| | b) Governance and Participation | X | | |
| | c) Sustainability and Environmental Quality | X | | |
| | d) Growth and Development | X | | |
| | e) Social Justice | X | | |
| 4.B. | Areas of Specialization and electives* | | | |
| B1 | Areas of Specialization #1: Environmental | X | | |
| | a) Specialization-specific knowledge | X | | |
| | b) Specialization-specific skills | | X | |
| | c) Specialization-specific values | X | | |
| B2 | Electives | | | |
| | a) Exposure to Other Professions and Specializations | X | | |
| | b) Emerging Trends | X | | |

Part 2 – Program Overview and Progress

The University of Puerto Rico (UPR) Graduate School of Planning (GSP) was founded by Salvador Padilla in 1965 in the mold of economic and national development planning reflecting the New Deal vision of Governor Rexford Tugwell and the Puerto Rican Planning Board led by Rafael Picó. GSP today retains these broad ambitions, educating planners both for local practice as well as policy positions across a wide range of economic, environmental and social practices in the Commonwealth. GSP enjoys an unusually prominent administrative position in the University, reporting directly to the campus' chief academic officer outside the college structure. Importantly, UPR is under severe stress from an anticipated \$300 million budget cut tied to a fiscal crisis in the Commonwealth of Puerto Rico, which is also responsible for substantial out-migration from the island.

GSP is the dominant force in educating and advancing the planning profession in Puerto Rico with graduates staffing all the key public, private and non-profit sector planning organizations in the Commonwealth and holding virtually all the leadership positions of the Puerto Rican Planning Society. It offers the only accredited Spanish-language planning program in the territorial USA. Graduates evidence excellent policy research skills, yet legal, modeling and plan making abilities are uneven, reflecting wide disparities in student preparation and curricular options. Retention and graduation rates are less than desired, reflecting, in part, challenges in the Puerto Rican economy.

The School's faculty is highly collaborative within UPR and internationally. The School's research is widely influential across the Commonwealth, with many inter-disciplinary partnerships including several significant federally-funded research projects. The School publishes the PLERUS Spanish-language journal of planning, and developed the XPLOAH spatial decision support system. They have long been the major driver of development of GIS technology for policy and planning in the Commonwealth. Research output among the faculty is not uniform, however, with certain faculty emphasizing publication and others professional interventions.

School leadership enjoys the confidence of faculty, students and partners. Governance is participatory and responsive. GSP has made many adjustments in response to findings of the last PAB review in 2010, including an elaborate and effective program of learning outcomes assessment and a major curricular overhaul proposed. The strategic plan calls for a number of new initiatives that respond well to GSP's opportunities and challenges including new dual degree programs and an accelerated bachelor's – master's track.

These Site Visitors see key opportunities for growth and enhanced impact at GSP in areas of sustainable development, continuing education, and resilience research, while noting concern over a new campus-wide Urban Studies initiative that may compete with the planning school which it does not use to full effect.

Part 3 - Assessment and Recommendations

A. Met

The following criteria were assessed as met based on the Site Visit Team's review of the Self-Study Report and information obtained during interviews and meetings during the Site Visit.

1. Mission and Strategic Plan

A. Strategic plan

The Strategic Plan was recently updated and is quite comprehensive. Participants included student representatives and appointed faculty members, and input was requested from the entire student body, faculty, and alumni.

B. Mission statement

The GSP Mission Statement and Vision, rewritten since the last accreditation review, clearly sets forth how the program seeks to train its students to be effective planners in the current environment.

C. Program goals

The 2015 Strategic Plan has six goals that flow from the Mission Statement and Vision. They demonstrate the progress made since the previous Strategic Plan and recognize the challenges facing GSP at the present time. Several of these goals are addressed elsewhere in this report, including strengthening research and publication initiatives; increasing GSP impact on public policy; expanding internationalization; and improving relations with GSP alumni.

D. Measurable objectives

The Strategic Plan established measurable objectives (see also Criterion 7A).

2. Students

A. Student quality

Based on the SSR, interviews with students, alumni and employers and additional information provided on site regarding undergraduate GPA and EXADEP (a test of admission in Spanish on a scale of 200 to 800), the GSP Program accepts almost all applicants, leading to a wide range of student quality. Course grade distributions and review of student work suggests that nonetheless, the Program maintains reasonable student quality.

B. Student diversity

Describing the GSP student body's background in terms of U.S. Census racial and ethnic diversity categories is not applicable in the context of Puerto Rican society, which historically

has self-identified as "mestizo"—a product of two or more races including Indigenous, European, African and Asian. Likewise, the Hispanic ethnic identifier is not typically used outside the U.S. mainland and in Puerto Rico: citizens do not identify with it on the island nor do Puerto Rican authorities track it. The GSP students are diverse in terms of regional origin from within Puerto Rico, income (e.g., 34% of the student body is part-time needing to work while in school), and in terms of variety of undergraduate academic backgrounds, age, and gender.

C. Size of Student Body

The student body is easily sufficient to constitute a community of inquiry, with 50 full-time and 25 part-time students. The School could, however, support a larger student body than is now enrolled. With current fiscal pressures in the UPR system due to a financial crisis in the Commonwealth, low enrollment puts the School in a vulnerable position. Current headcount reflects low application numbers and retention rates in the 50 percent range.

Increased proactive recruitment, perhaps including outreach to Caribbean and Latin American undergraduate university programs in related fields, as well as targeted advertising to prospective bi-lingual students on the U.S. mainland could lead to increased applications and enrollment. Strategies could involve greater visibility at international conferences, an expanded social media presence and more frequent publication in mainstream planning journals both in English and Spanish. The School's Outcome Assessment Plan already calls for such actions, but progress in this area has been nil and will require resources. The school is now exploring an accelerated BS-MP program as well as dual degree programs with architecture, public administration and law. These could be significant recruitment enhancements.

E. Student engagement in the profession

There is ample evidence of student engagement with the profession. Recent and old-time graduates hold key leadership positions in the Puerto Rican Planning Society (SPP) as well as in the Board of Examiners of Professional Planners (Junta Examinadora de Planificadores), which licenses planning graduates. GSP students engage in the profession through internships, class projects, conferences, and through Student Council activities developed in coordination with the SPP.

3. Faculty

A. Faculty quality

All full-time professorial faculty have doctoral degrees; all but one in planning, and most from highly-ranked U.S. institutions. More than half the faculty have been teaching in excess of 15 years. Many of the full-time faculty are very widely known and respected in Puerto Rico and a number nationally/internationally. Affiliated and adjunct faculty have appropriate terminal degrees and are active professionally in the sub-fields they teach.

B. Faculty diversity

GSP full-time faculty have terminal degrees from nine institutions in four countries and reflect a very broad range of planning sub-fields and approaches. A dedicated corps of affiliated and adjunct faculty broaden the experiential base and add current practice familiarity.

Understanding racial and ethnic diversity of the faculty requires context. Puerto Rico has a long history of racial mixing dating to the 1500s involving indigenous peoples, Europeans, Africans and Asians. With general recognition of the mixed-race or Mestizo nature of the population, few Puerto Ricans identify with the racial categories offered in the U.S. Census. In addition, the term Hispanic is not generally part of self-identity for many Puerto Ricans, at least as long as they live on the island. In this context, PAB's racial and ethnic identification tables are not viewed as pertinent by faculty or university administrators at UPR. Unlike mainland US institutions, UPR does not collect these data.

C. Faculty size

With ten full time and 12 part-time and adjunct faculty and a Student-Faculty ratio of 7.9, there is more than sufficient faculty size to staff the Master of Planning Program. There is uncertainty, however, about whether current faculty size will continue. One long-time faculty member has given notice of retirement, and a second such notice is anticipated in the near-term future. These lines are not expected to be retained by GSP, at least in the near term, because of the Commonwealth's fiscal crisis and resultant budget cuts at UPR.

D. Engagement with students

GSP's faculty culture demands a high-level of interaction with students, evidenced in small class sizes and intensive thesis guidance. Demands on student lives, however, including income-earning and family responsibilities, as well as what may be some student reluctance to engage faculty before one has questions well formed, has led to gaps in contact. This is discussed further under Criterion 2.D below in section B.

F. Professional involvement and community outreach

The preponderance of faculty are members of the Puerto Rican Planning Society (Sociedad Puertorriqueña de Planificación – SPP); five are licensed planners under Puerto Rican law. Most have completed recent projects for government or non-profit planning clients in the Commonwealth. Faculty are frequent participants to SPP's annual congress. School leadership is well known to the leadership of the profession on the island. Faculty lead workshop classes that complete plans and other products for communities in the Commonwealth.

G. Professional development

Full-time faculty average 1 1/2 presentations to conferences and other professional gatherings each year. All but a few faculty members are active in either publishing research or completing reports for professional clients.

4. Curriculum and Instruction

B. Areas of specialization and electives

With a few partially met exceptions, the curriculum meets almost all requirements of PAB and is effective in preparing highly-qualified planners across a wide spectrum of planning jobs reflecting the strength of the program's specializations.

Four areas of specialization: Urban Planning, Environmental Planning, Social Planning, and Economic Planning build on the curriculum's core; each specialization offers a set of required specialization-related theory, methods and contemporary issues courses, which give students a level of expertise in the chosen area. GSP electives provide opportunities for students to gain knowledge in new trends and emerging issues in planning as well as in relevant areas outside planning.

D. Facilities

The GSP occupies the 6th and 7th floor of a recently-constructed building "Plaza Universitaria" with state-of-the art classrooms, library, offices, meeting rooms, computer lab and student workspaces; the building is adjacent to the "Urban Train" station and multi-modally accessible. Plaza Universitaria facilities are the newest and finest on the UPR-Rio Piedras campus.

E. Information and technology

The GSP's computer lab is up-to-date in computer equipment and software and serves the computational, instructional, and research IT needs of students and faculty. It is run by a full-time faculty member and five TAs. The university does not usually arrange site licenses for software, so students typically do work requiring specialized software in on-campus computer labs.

5. Governance

A. Program autonomy

GSP is a free-standing unit of the University of Puerto Rico reporting directly to the Dean of Academic Affairs (analogous to a provost at most U.S. institutions). The School enjoys authority over its policies and operations at a level within norms for academic units in universities.

B. Program leadership

GSP's Director is a tenured full professor who enjoys widespread respect internally, among cognate faculties and administration, and in the planning profession. She is active moving the Program forward strategically as well as in routine management of School functions.

C. Communication

GSP has a thorough web site, maintains current email lists for all key stakeholder groups, and is in regular contact with internal constituencies and external partners.

D. Faculty and student participation

The School has five standing committees; each (except Personnel) has student representation and meets regularly. The faculty meet approximately once a month during the academic year and have opportunity to deliberate on all key policy matters of the School. This is a substantial change from the situation at the time of the previous Site Visit in 2010 when faculty and student participation in governance was found inadequate.

E. Promotion and tenure

Formal policy documents provide clear statements of expectations for faculty work including criteria for promotion and tenure. Current untenured, tenure-track faculty have contracts that are unusually specific in laying out requirements for success; they also have mentors who conduct reviews at least annually. More senior faculty do not have annual reviews as noted under 3.E, but say they understand expectations. A recent action of the Academic Senate seems to require that annual review processes become universal.

F. Grievance procedures

UPR has procedures in place for fair processing of personnel and student appeals and grievances.

6. Program Assessment

A. Faculty research and scholarly contributions to the profession

The SSR summarizes the faculty contributions to the profession. Additionally it is worth noting that several faculty members have established interdisciplinary collaborations including several significant federally funded research projects and joint programs with international and tier-one American universities.

B. Student learning and achievement

Discussions with students, alumni, employers and the SPP indicate that the students leave GSP with the requisite skills to become effective planners, with a few exceptions noted. The skill gaps will be addressed by the proposed changes to the curriculum that include new

required classes and substitute a practicum for the thesis which will give the students more of a real world experience. Additionally, the SVT reviewed student project work and theses that demonstrated a high level of quality, particularly the theses.

D. Outcomes

Graduate satisfaction and employment has fluctuated but generally increased in recent years. As mentioned above, the students are generally well-prepared for their jobs upon graduation. The surveys of recent students show a good level of satisfaction although the participation rate in these surveys is low (GSP is working on improvements to the way that alumni are tracked post-graduation).

7. Progress

A. Progress towards goal attainment

GSP prepared an Outcomes Assessment Plan Table that details the outcomes, indicators, timeframe, projected results and action plan covering all aspects of the program, based on the Strategic Plan. Progress can be tracked from this plan.

B. Programmatic changes

Much of what is planned for GSP over the next few years is based upon the curriculum changes that will be under University review in the next few months. Many of these changes should enhance the educational experience at GSP.

C. Strategic issues for the next 5-7 years

In addition to the curriculum change, GSP is considering ways in which to partner with other University schools including Geography and General Studies (accelerated Bachelor's-Master's degree in Planning) and dual Master's degrees with Architecture, Law, and Public Administration. Other strategic initiatives include improvements to the mentorship program, better outreach to alumni and area professionals, broad-based presence on social media, strengthening the annual local planning conference, and involving the community in internships and practicums.

D. Public Information

The SVT reviewed the public information on the GSP website and found it adequate.

B. Partially-Met

The following criteria were assessed as partially-met based on the Site Visit Team's review of the Self-Study Report and information obtained during interviews and meetings during the Site Visit.

| | | |
|------------------------------|--|---|
| Standard: 2. Students | | Criterion: D. Student advising, services and support |
| Reason for Assessment | <p>While the GSP has initiated a mentorship program that assigns a professor to each student in accordance with the student's academic interests and requires that students meet every semester with their mentor; and while a faculty member has been instrumental in developing this program, which aims to track student progress from admission to graduation providing adequate advising at every step, to date, program implementation is inconsistent</p> <p>Overall placement statistics have improved in recent years, but are still below desired levels. Assessment of placement is complicated by inability to keep contact with many alumni.</p> <p>Beyond circulation of notices, job placement services depend on personal contacts between school personnel and individual students. While many students receive excellent advice and place well, and others complete for-credit internships that lead to full-time jobs, some students operate with little or no job placement advice or counseling. The School should consider implementation of events to discuss job search strategies, organized resume reviews and/or mock interviews, as well as other career development issues. While some of these are available at the university, conducting events tailored to the planning workplace can be more useful to planning students and may get higher participation rates.</p> | |
| Recommendation | <p>Fully implement the program's objectives "1.7 Improve graduation rates" and "1.8 Reduce average time-to-degree", as presented in the Outcome Assessment Plan's "Goal 1: Provide an academic program of excellence in Planning" (SSR pp. 79-80).</p> <p>Advising would benefit from a tracking system and/or use of degree program milestones that cannot be satisfied without advisor approval. It might also be useful to encourage a system of student peer-to-peer advising. While recognizing the challenges of job placement in the current Puerto Rico economy, job placement would benefit from conscious programmatic efforts to deliver career development advice as well as routines to connect students to opportunities. Alumni tracking should be more deliberate.</p> | |

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| Standard: 3. Faculty | | Criterion: E. Research and Scholarship |
| Reason for Assessment | Recently hired and some of the more senior faculty have active research programs leading to important professional advances. Some | |

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|-----------------------|--|
| | of the more senior faculty, however, do not fund their research externally nor publish results in the peer-reviewed literature. Only recently, the school started providing systematic feedback on performance to faculty through mentoring and evaluations; this feedback does not yet extend to senior faculty. In our view this missed opportunity makes it difficult to achieve School goals and support the University's transition to high research impact. |
| Recommendation | The School should assist research-inactive faculty to build appropriate research programs. An annual evaluation process for all faculty, ideally including review by a Personnel Committee, could ensure that each faculty member receives timely feedback on his/her work that can lead to adjustments. Alternatively, or in addition, additional partnerships between research-inactive faculty and others who have proved research records both in GSP or elsewhere on campus could be developed. |

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| Standard: 4. Curriculum and Instruction | | Criterion: A.1.c.: Planning Law |
| Reason for Assessment | A new "Planning Law" course (PLAN 6116) has been taught since 2014, however, it is still offered as an elective. | |
| Recommendation | The "Planning Law" course should be made part of the core curriculum and required of all students as presented in the new proposed curriculum. | |

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| Standard: 4. Curriculum and Instruction | | Criterion: A.2.c.: Quantitative and Qualitative Methods |
| Reason for Assessment | In the current core curriculum, Planning Methods I (PLAN 6551) deals with information systems and does not address this criterion and Planning Methods II (PLAN 6552) is perhaps too ambitious in scope (i.e., includes descriptive and inferential statistical techniques, qualitative analysis, survey design, sampling methods, cost benefit analysis, correlation and regression analysis) and is short in depth, superficially exposing students to these techniques. Additionally, quantitative methods emphasize research skills but not planning practice skills such as forecasting and simulation modeling. Land use implementation tools such as zoning are not developed sufficiently. | |
| Recommendation | While the new proposed curriculum eliminates PLAN 6551 and modifies PLAN 6552 into a new four-credit-hour "Planning and Research Methods" course, which expands the course's qualitative skills content, the program should carefully assess the core data collection, analysis, and modeling competencies necessary to meet | |

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|--|-----------------|
| | this criterion. |
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| Standard: 4. Curriculum and Instruction | | Criterion: A.2.d.: Plan Creation and Implementation |
| Reason for Assessment | The current curriculum emphasizes plan making at the capstone project stage and misses the opportunity to build plan preparation competencies at an earlier stage with carry over to other courses. | |
| Recommendation | Implement the new course "Making Plans" as presented in the new proposed curriculum. | |

| | | |
|--|---|--|
| Standard: 4. Curriculum and Instruction | | Criterion: B.1.#4.b.: Economic Specialization: Specialization-specific skills |
| Reason for Assessment | The Economic Planning specialization largely requires generic theoretical content, while there are elective courses rich in specialization-specific theory and method. | |
| Recommendation | To ensure that specialization-specific theory and method content is not duplicated across required and elective courses and that electives build on core courses, when revising the current "Economic Planning" specialization to the proposed curriculum's "Economic and Community Development," carefully develop the desired learning outcomes associated with the specialization's specific skills. | |

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| Standard: 4. Curriculum and Instruction | | Criterion: C. Instructional delivery and scheduling |
| Reason for Assessment | Issues of course selection and timing as well as thesis topic development were identified as contributing to a very lengthy time-to-graduation process. The scheduling problem is exacerbated by the number of part-time students that are currently employed and need to attend evening classes. | |
| Recommendation | The School is already actively addressing these curricular concerns. A curricular overhaul has been adopted in concept by the faculty and is being proposed to the University administration. A proposed practicum course that substitutes the current proposal preparation course (PLAN 6513) and the current project thesis course (PAN 6614) aims to remedy the extensive amount of time it takes students to complete their theses. A mentorship program designed to ensure greater engagement of students with faculty advisors is in place. However, scheduling electives that match student demand at a time of decreasing enrollments and faculty resources remains a challenge. This requires innovative procedures designed to achieve the desired engagement of students with faculty advisors and school support staff around issues of course selection and timing and internship and | |

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| job placement. |
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| Standard: 6. Program Assessment | | Criterion: C. Student retention and graduation rates |
| Reason for Assessment | Student retention and graduation rates fluctuated but were generally lower than what would be considered acceptable. One of the primary reasons for this is somewhat out of GSP control. Given the economic challenges and realities in Puerto Rico, there are a number of students that do not finish the program because they either move off-island or take advantage of jobs offered to them rather than finishing the degree program. However, in our view, it is apparent that it can take students more than two years to complete the program (sometimes up to four or more years). This serves as a disadvantage to students looking to advance their career opportunities. A number of reasons were cited by students, alumni and others such as the difficulty in scheduling classes, including required ones; the lack of an effective advising or mentorship program; and the difficult process for completing the thesis requirement. | |
| Recommendation | GSP recognizes these issues and has taken steps through its Strategic Plan to incorporate changes in the curriculum and changing the thesis requirement. An orientation program and peer-to-peer student advising can help students through the program. See also the response for Criterion 4C above. | |

C. Unmet

The following criteria were assessed as unmet based on the Site Visit Team’s review of the Self-Study Report and information obtained during interviews and meetings during the Site Visit.

None.

Part 4 – Program Strengths

The University of Puerto Rico, Graduate School of Planning (GSP) is the dominant force in educating and advancing the planning profession in Puerto Rico with graduates staffing all the key public, private and non-profit sector planning organizations in the Commonwealth and holding virtually all the leadership positions of the Puerto Rican Planning Society. It offers the only accredited Spanish-language planning program in the territorial USA.

The School’s research is widely influential across the Commonwealth, with many interdisciplinary collaborations including several significant federally funded research projects including a NASA-funded, three institution, \$1.4 M project on human impacts on coastal ecosystems. The School publishes the PLERUS Spanish-language journal of planning, and

developed the XPLOAH spatial decision support system. The School has long been the major driver of development of GIS technology for policy and planning in the Commonwealth.

The School's faculty is highly collaborative with active partnerships involving Architecture, Environmental Science, Geography, General Studies, Public Administration and Law on the campus, and international joint programs with Feng Chia University in Taiwan, MIT in Massachusetts, and University of Barcelona in Spain.

Graduates evidence excellent policy research skills, with significant numbers going on to doctoral study in planning and related fields.

GSP is located in a beautiful central campus building that provides excellent classrooms, offices, laboratories and student work spaces.

School leadership enjoys the confidence of faculty, students and partners as well as UPR administration, having critically assessed performance in education and research leading to a proposal for major curriculum overhaul, mentored junior faculty with vision, and is active building new enrollment initiatives together with a number of other units on campus.

Part 5 – Furthering Excellence

1. Realizing the potential for recruitment from the Caribbean and Latin America would be well served by re-organizing the specializations offered. International Development Planning or Sustainable Development are the terms most widely in use across the Global South to reflect the underlying objectives of what GSP calls Social Planning and Economic Planning. With the adoption of the New Urban Agenda by the United Nations at the Habitat III meetings in Quito this fall, this is an ideal moment to launch such a specialization. Exploring Fulbright Commission, Rockefeller Foundation and Ford Foundation funding for students studying in such a specialization could be transformative.
2. Puerto Rico recently changed the law concerning planner licensure to require 32 hours of continuing education for all licensed planners every four years. GSP could be the go-to resource for continuing education short courses for practicing planners in the Commonwealth, perhaps using distance learning technologies to reach out to non-metropolitan areas of the island.
3. GSP faculty have demonstrated the potential for large multi-disciplinary research projects involving planners, but current institutional arrangements leave research grant identification and proposal preparation essentially to individual faculty. Creation of a Caribbean Resilience Research Institute or a similar broad umbrella themed research center connected to planning would increase the number of such externally-funded projects involving UPR faculty, leading to greater graduate student support (and recruitment) and increased profile for the School and the University. Such an institute or center would include staff to assist in identifying funding opportunities, preparing proposals and assisting with grant management.

4. An Urban Studies PhD program is now under development at UPR utilizing GSP courses but without its faculty involved in program design, policy making or governance. This proposal appears to seek funds to duplicate courses currently taught in GSP, similar library resources and a GIS/spatial analysis laboratory. **Direct involvement of GSP in the leadership group of this new Urban Studies PhD program would strengthen the intellectual base of the program, would lead to considerable cost efficiencies, as well as supporting research and teaching in GSP with the involvement of doctoral students.**

Part 6 - Appendix

A. Site Visit Schedule

PAB SITE VISIT FINAL SCHEDULE
University of Puerto Rico
Site Visit Dates – February 5 to 8, 2017

SUNDAY FEBRUARY 5, 2017

1500 – 1600 Carmen Concepción, Professor and Program Administrator
1600 – 1700 Directors of the Sociedad Puertorriqueña de Planificación (SPP):
David Carrasquillo, PPL, President
Marisol Rodríguez Rivera – Puerto Rico Planning Board
Alberto J. Camacho Meléndez – Universidad del Este (private university)
Evelyn Vázquez Matos – Sistema Ana G. Mendez (private university)
Karla Torres Cruz – Uviation, Marketing Associate
Federico Del Monte Garrido – PR Housing Department
Martha Bravo Colunga – Department of Transportation and Public Works
Anselmo De Portu Hamawi – Department of Natural and Environmental Resources
Mari Villarini Marrero – Consultant
Evelyn Moreno – Ciudadanos del Karso (an Environmental NGO)

MONDAY FEBRUARY 6, 2017

0830 – 0900 Rafael L. Irizarry, Professor and Program Coordinator of Academic Affairs
0930 – 1030 Carmen H. Rivera, Acting Dean of Academic Affairs
Pedro Rodríguez-Esquerdo, Dean of Graduate Studies and Research
1030 – 1045 María A. Castro, Acting Chancellor
1120 – 1200 Tour of Program Facilities with Concepción and Aurelio Castro, Lab Coord
1200 – 1330 Lunch with Employers
Vicente Quevedo, Assistant Secretary of Planning, Department of Natural and Environmental Resources
Juan Carlos Vega, PPL, Past Planning Director, Tourism Company
Jorge Hernández, PPL, Director Planning Area, Municipality of San Juan
Deborah Andrade, PPL, Director Office of Planning and Land Use, Municipality of Trujillo Alto
Ada Bones, Director Planning Office, Municipality of Guaynabo
Wanda Crespo, PPL, Director of Planning Division, Estudios Técnicos (Consulting firm)
Yilia Baucage-Bou, Puerto Rico Office Leader, Steer Davies Gleave (SDG, Consulting firm)
Prof. Glenda Román, Professional Services Manager, Geographic Mapping Technologies
María T. Rodríguez, PPL, Planning and Budgeting Manager, Corporación del Proyecto ENLACE Caño Martín Peña
1345 – 1415 Luis Santiago, Professor
1415 – 1445 Norma Peña, Associate Professor
1445 – 1515 Criseida Navarro, Professor
1600 – 1700 Students: Coordinators: Kathleen Ramos, President GSP Student Council
Margarita Ríos, Student Liaison, SSR
14 students in attendance
1700 – 1800 Alumni:

David Carrasquillo, Municipality of San Juan, Planner
 Eduardo Zavala, Ph. D. Student, Social Work, UPR-RP
 Karla Torres, Uviation, Marketing Associate
 George Davis NA
 Natasha Rivera, SDG Consulting, Consultant Assistant
 Julio Verdejo, CODED+ P Corporate, Consultant, President
 Luis Villanueva Cubrero, Ph.D. student, Environmental Science
 (IGERT), UPR-RP
 Gabriel Quiñones, SDG Consulting, Consultant Assistant
 Argenis Catala, Ph.D. student, Environmental Science, UPR-RP
 David Schlifka, GAITNER Internacional, Conduct Survey Work
 Laura Martı, Municipality of Trujillo Alto, Planning Specialist

TUESDAY FEBRUARY 7, 2017

| | |
|-------------|--|
| 0820 – 0920 | Irizarry and Navarro: Student Outcomes Assessment |
| 0920 – 1020 | Review of Student Work |
| 1050 – 1120 | Gustavo Garcıa, Assistant Professor |
| 1120 – 1150 | Maritza Barreto, Professor |
| 1150 – 1220 | Elıas Gutierrez, Professor |
| 1220 – 1350 | Lunch with Adjunct Faculty: Prof. Luis J. Torres-Asencio (Planning Law); Plan. Jose Auger (Financial and Fiscal Planning and Public Sector Planning); Dr. Jenniffer Santos (Social Science Research Methods); Prof. Felix Aponte (Implementation Processes and Environmental Planning); Plan. Lyvia Rodrıguez (Director ENLACE project, Community Development Planning) |
| 1400 – 1430 | Research Institute Personnel: Barreto and Santiago |
| 1430 – 1500 | Aurelio Castro, Instructor |
| 1500 – 1530 | Gerardo Navas, Professor (<i>ret.</i>) |
| 1530 – 1630 | Department Heads and Coordinators: Hiram Melendez-Juarbe, Associate Dean of School of Law Carlos Guilbe, Dept. of Geography Jorge Ortız, Director of Program of Environmental Sciences and Ph.D. Program – IGERT), Jorge Lizardi, Academic Program Coordinator, School of Architecture |
| 1700 – 1730 | Career Services Personnel: Irizarry, Navarro, Carmen Rodrıguez, Coordinator of Student Affairs |

WEDNESDAY FEBRUARY 8, 2017

| | |
|-------------|---|
| 0745 – 0845 | Director Concepcion and Professor Irizarry |
| 0900 – 1000 | Dean Rivera and Dean Rodrıguez-Esquerdo |
| 1115 – 1200 | Chancellor Castro and Celeste Freytes, Acting President, UPR System |

XXI. Annex 2: FEMA Support Letter

UPS-RPEGP 18/06/19 AM 07:53



FEMA

June 6, 2019

Norma I. Peña Rivera, Ph.D.
Acting Director
Graduate School of Planning
Dr. Salvador M. Padilla Escabi UPRRP
10 Ave. Universidad, STE 1001
San Juan, Puerto Rico, 00925-2530

Dear Norma,

The Federal Emergency Management Agency (FEMA) is pleased to be able to continue to support the Graduate School of Planning in the development of a certificate for disaster planning.

In the past we were able to provide a variety of support, summarized on the second page of this letter.

In 2019, we will be able to continue to provide the University with experts to advise on recovery, resiliency and mitigation planning; to advise on the development of a viable certification program; and to support the development of classes and curriculum. Experts will help develop a strong program with all the components needed to equip students to support the recovery of the Commonwealth by having appropriate planning skills, connections to resources, and professional advice.

We will also help promote the program among local planners and recovery stakeholders.

FEMA recognizes the centrality of University of Puerto Rico's Planning School to a successful recovery. We believe you should have access to the most knowledgeable disaster recovery professionals and experts as you embark on preparing the island for the ongoing recovery and future disasters. We are proud to be a partner to you in this endeavor and look forward to a fruitful ongoing relationship.

Regards,

Shannon McLachlan
Regional Coordinator for Community Planning and Capacity Building
FEMA Region 2
One World Trade Center
New York, NY 10007
347-55-3818

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2018 Support

Provided Guidance on the Development of a Certificate Program in Recovery Planning and Natural Hazards Resilience

The Commonwealth's public university has a respected and active Planning Department but was eager to gain more post-disaster recovery planning expertise after Maria. FEMA's Community Planning and Capacity Building (CPCB) team has worked with academics from other universities and expert post-disaster recovery planners to supply the university with the expertise needed to develop a new certificate program that will help meet the planning needs of the future. We helped finance travel for Drs. Gavin Smith, formerly of the Coastal Hazards Center at University of North Carolina; and Rob Olshansky, Professor Emeritus at University of Illinois, to advise the department as work on the certificate got underway.

FEMA and UPR School of Planning Organized a Recovery Symposium

CPCB worked with the University of Puerto Rico's Graduate School of Planning to develop a symposium focused on recovery and resilience planning. The forum brought together planning professionals from Puerto Rico and national experts in the field of recovery planning to examine what resilience should look like across the social, economic, built, and natural landscape in Puerto Rico. The forum also served as an informal kickoff for UPR's certificate program in recovery planning and natural hazards resilience and was attended by over 150 people.

Provided Guidance on Incorporating Hazard Mitigation into the Planning Curriculum

CPCB has been working with the Graduate School of Planning to ensure that new graduates are prepared to work in the field of hazard mitigation. This support has included sharing intelligence, providing advice on a hazard mitigation curriculum, and working with the State Hazard Mitigation Officer to develop hazard mitigation internships. The effort is helping implement new state requirements around mitigation planning and risk analysis, and creating conditions to help supply the Commonwealth with the expertise needed to meet these needs in the future. Graduates who find work in the field of land use planning will also benefit from a strong foundation in hazard mitigation because they will be prepared to incorporate risk reduction into everyday planning decisions.

XXII. Annex 3: Student Profile Alignment with Conceptual Framework and Curriculum

| Certificate on Disaster Planning | | | | |
|---|---|--|--|--|
| Student Profile Alignment with Conceptual Framework and Curriculum Design | | | | |
| Mission: | The Certificate expands the academic offer of EGP in the light of recent developments in disaster planning in order to foster a new kind of expertise in Puerto Rico and the Caribbean, and integrates national disasters and planning frameworks to practices and research. | | | |
| Goals | Objectives | Student Profile of the Unit: Divided into knowledge, skills and values | Curricular components | Course title |
| Goal 1: Enhance the relevance of the EGP through the development of unique and innovative training in disaster planning, attractive to not only planning professionals but also to diverse graduate students interested in these matters. | Objective 1.1 Develop a curriculum that promotes students' knowledge that incorporates the National Disaster Planning Frameworks as well as planning approaches to disasters and issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability. | KNOWLEGE: 1. Fundamental concepts in disaster science and emergency management for planning | Core courses and electives | 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning 4. Introduction to Critical Infrastructure 5. Development and Social Vulnerability |
| | | 2. Theoretical paradigms associated to the study of planning and disasters and natural hazards | | |
| 3. Methodologies to analyze risks, impacts, and consequences associated with different types of hazards | | | | |
| 4. Origin, processes and spatial distribution of natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion | | | | |
| 5. Implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning | | | | |
| 6. Impacts of extreme events on the continuity and functioning of social, technical, and natural systems. | | | | |
| 7. Basic components of a Risk Profile | | | | |
| 8. Relationship between a spatial and temporal analysis of the risk profile and the design of efficient plans and protocols | | | | |
| 9. Familiarity with the National Incident Management System (NIMS), the National Preparedness Goal and System, and the National Planning Frameworks. | | | | |
| 10. Public policies and strategies for the management and protection of critical infrastructure | | | | |
| 11. Mitigation of risks associated with infrastructure vulnerability | | | | |
| | Objective 1.2 Offer hybrid and on-line courses that support professionals' access to post-graduate education on disaster planning. | 1. Theoretical paradigms associated to the study of planning, disasters and natural hazards | Remedial (pre-requisite) course, and electives | 1. Introduction to Planning Theory and Practice 2. Introduction to Critical Infrastructure 3. Development and Social Vulnerability |

| | | | | |
|--|--|---|-----------------------|---|
| Goal2: Develop and maintain an academically sound and technically competent faculty which ensures an avant-garde training not only in official courses, but also through continuous seminars and hands-on workshops. | Objective 2.1 Promote academic discussions on current and emerging disaster planning issues through seminars that contribute in identifying potential research themes. | 1. Implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning. 2. Impacts of extreme events on the continuity and functioning of social, technical, and natural | Professional seminars | 1. Professional Seminar |
| | Objective 2.2 Integrate research-related skills on disaster planning in the curriculum as part of student's competencies. | SKILLS: 1. Logical and critical thinking for the development of research questions for the pre and post-disaster stages 2. Critical analysis of existing information, literature and research on disaster management 3. Evaluation of technical vulnerabilities of the critical infrastructure 4. Zoning application for risk mitigation 5. Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters 6. Geographic analysis associated with risks and disasters | Core courses | 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning |
| Goal3: Graduate a new kind of professional with a strong foundation on the necessary ethical competencies for working with all the stages of disasters and related issues. | Objective 3.3 Cultivate values in students related to disaster planning. | VALUES: 1. Analyze the impacts of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of disasters 2. Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning 3. Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers 4. Evaluate changes in public policy that have resulted from catastrophes. 5. Apply basic analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions | Core courses | 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning |
| | | | | |

XXIII. Annex 4: Student Profile in Alignment with UPRRP's Student Profile

**Certificate Student Profile in Alignment with UPRRP's Student Profile
Post-baccalaureate Academic Certificate in Disaster Planning
Graduate School of Planning**

| UPRP Student Profile | Student Profile of the Certificate: Divided into knowledge, skills and values |
|---|---|
| Conduct research or projects with the purpose of creating solutions or new knowledge. | KNOWLEDGE: Methodologies to analyze risks, impacts, and consequences associated with different types of hazards |
| | SKILLS: Logical and critical thinking for the development of research questions for the pre and post-disaster stages |
| Use critical thinking to evaluate knowledge from a variety of theoretical and methodological approaches. | KNOWLEDGE: Theoretical paradigms associated to the study of planning and disasters and natural hazards |
| | SKILLS: Geographic analysis associated with risks and disasters |
| Use independent thinking and demonstrate creativity and initiative. | KNOWLEDGE: Origin, processes and spatial distribution of natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion |
| | SKILLS: Critical analysis of existing information, literature and research on disaster management |
| | VALUES: Apply basic analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions |
| Integrate theories, practical protocols and ethical codes to his or her professional or research endeavors. | KNOWLEDGE: Fundamental concepts in disaster science and emergency management for planning |
| Critical, effective and ethical information management. | KNOWLEDGE: Implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning |
| | SKILLS: Zoning application for risk mitigation |
| Incorporate technology in his or her professional or research endeavors. | SKILLS: Evaluation of technical vulnerabilities of the critical infrastructure |
| | SKILLS: Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters |
| Effectively communicate knowledge of the field of knowledge. | SKILLS: Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters |
| Autonomous and continuous learning. | |
| Show commitment to the protection and enrichment of natural an cultural patrimony. | KNOWLEDGE: Impacts of extreme events on the continuity and functioning of social, technical, and natural systems. |

| | |
|---|---|
| Demonstrate respect to human rights by concrete actions for social inclusion and commitment to diversity. | VALUES: Analyze the impacts of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of disasters |
| Demonstrate collaborative actions throughout multidisciplinary or interdisciplinary team work. | VALUES: Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning |
| Commit and promote leadership the contributes to individual as well as collective transformations. | VALUES: Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers |
| | VALUES: Evaluate changes in public policy that have resulted from catastrophes. |

XXIV. Annex 5: Course Syllabi

XXV. Annex 6: Recruitment Plan

**RECRUITMENT PLAN
POST-BACCALAUREATE ACADEMIC CERTIFICATE IN DISASTER PLANNING
GRADUATE SCHOOL OF PLANNING
UNIVERSITY OF PUERTO RICO RIO PIEDRAS**

| OBJECTIVES | ACTIVITIES | PERSON IN CHARGE | FUNDING | TIMELINE |
|--|--|--|---------|--|
| 1. Develop marketing targets for the Certificate in Puerto Rico and the Caribbean | 1.1 Put together a list of public and private potential institutions with interest in the Certificate | Disaster Planning Certificate (DPC) Director, EGP Director's Secretary, Contracted Students (undergrad "Jornal" program) | EGP | First month after approval of Certificate and continuously |
| | 1.2 Populate the list with contacts and contact information | EGP Director's Secretary, Contracted Students | EGP | First month after approval of Certificate |
| | 1.3 Identify institutions that are potentially interested in the Certificate that locate in the Caribbean and develop a mailing list | EGP Director, DPC Director, SPP* | EGP | First month after approval of Certificate |
| 2. Disseminate information about the Certificate based on the lists created as a result of completion of objective 1 | 2.1 Design promotion materials for every target group | DPC Director, Contracted Students, EGP Students' Affairs Officer | EGP | First month after approval of Certificate |
| | 2.2 Create mailing groups and send promotions | EGP Director's Secretary | EGP | Continuous |
| | 2.3 Train Student Affairs Officer and administrative personnel on information and logistics about the Certificate | DPC Director | EGP | Second month after approval of Certificate |
| | 2.4 Set and implement a media tour about the Certificate | DPC Director, EGP Director | EGP | October 2020 |
| 3. Promote the Certificate every semester during UPRRP new students' application season | 3.1 Design new application season materials | EGP Students' Affairs Officer, Contracted Students | EGP | September 2020 and every year Sept |
| | 3.2 Send informational promotion | EGP Director's Secretary, DPC Director | EGP | October 2020 and every year Oct |
| | 3.3 Implement an Open House | EGP Students' Affairs Officer | EGP | November 2020 and every year Nov |
| | 3.4 Contact public and private institutions for recruitment visits and presentations | DPC Director, EGP Director | EGP | Nov-December 2020 and every new admissions season |

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|--|--|---|-----|---|
| 4. Secure the enrollment of 90% of newly admitted students | 4.1 Contact every student for follow up | EGP Students' Affairs Officer | EGP | December2020/Jan2021 and every year Dec/Jan |
| | 4.2 Set up a New Students' Orientation Night | DPC Director, EGP Students' Affairs Officer | EGP | December 2020 and every December |

XXVI. Annex 7: Faculty Development Plan

**Faculty Development Plan
Post-baccalaureate Academic Certificate in Disaster Planning
Graduate School of Planning
University of Puerto Rico Rio Piedras**

| Professor | Areas of Improvement | Activity | Date and Place | Estimated Cost | Indicators for Assessment of activity |
|-----------------------------|---|---|----------------------------------|-----------------------|--|
| Norma I. Peña Rivera | Disaster planning theory and practice | Association of Collegiate Schools of Planning | Nov. 4-8 2020/Toronto, Canada | \$2,000 | Attendance and Participation documents |
| | | Urban Affairs Conference | April 21-24/Nashville, Tennessee | \$2,000 | Attendance and Participation documents |
| Maritza Barreto Orta | Coastal planning and disasters | Association of Collegiate Schools of Planning | Nov. 4-8 2020/Toronto, Canada | \$2,000 | Attendance and Participation documents |
| Aurelio Castro Jiménez | Emerging technologies for spatial analysis | ArcGIS Developers Annual Conference | March 2021/California | \$3,000 | |
| Criseida Navarro Díaz | Geographic distribution of inequality and disasters | Association of Collegiate Schools of Planning | Nov. 4-8 2020/Toronto, Canada | \$2,000 | Attendance and Participation documents |
| Jennifer M. Santo Hernández | Communicating risk and vulnerable populations | National Science Foundation Grant Development | | | |
| | Alliance formations for disaster | | | | |

| | | | | | |
|-----------------------------|--------------------------|---|---|------------|---|
| Raúl Santiago Bartolomei | Housing and disasters | Association of Collegiate Schools of Planning Annual Conference | Nov. 4-8 2020/Toronto, Canada | \$2,000.00 | Attendance and Participatio n documents |
| | | Association of American Geographers Annual Meeting | April 6-10 2021/Seattle, Washington | \$2,000.00 | Attendance and Participatio n documents |

XXVII. Annex 8: Catalogue and Dissemination

Program Description

La Escuela Graduada de Planificación Dr. Salvador Padilla Escabí (EGP) ofrece un programa de estudios conducente a un Certificado Académico Post-bachillerato en Planificación en Desastres con el propósito de formar profesionales con las competencias para desarrollar una práctica en esta área de estudio. El Programa del Certificado Académico amplía los ofrecimientos de la maestría que otorga la EGP en la actualidad, y se mantiene dentro del marco de su misión y estándares de acreditación. Este Programa representa una oportunidad académica para los estudiantes y profesionales interesados en exponerse a nuevos conocimientos, destrezas y a una práctica en un área de carácter interdisciplinario, de gran necesidad en Puerto Rico – así como en la Región del Caribe y América Latina, y con alto potencial de opciones en el ámbito laboral.

A nivel internacional las pérdidas asociadas a los desastres continúan en aumento. En el año 2017 se reportaron 335 desastres que afectaron a 96 millones de personas, terminaron con la vida de al menos 9,697 personas, y tuvieron un costo que sobrepasa los \$334 billones de dólares (CRED, 2018). Este campo comenzó a desarrollarse en los años sesenta y ha tomado un marcado auge a partir de los resultados catastróficos de eventos extremos recientes en las poblaciones afectadas; así como la preocupación por los efectos del cambio climático a nivel mundial.

Graduate Profile

Los egresados del Certificado podrán adquirir las siguientes competencias:

Conocimiento

- Conceptos fundamentales sobre definiciones de desastres y relación con etapas de emergencia (preparación, mitigación, respuesta y recuperación)
- Paradigmas teóricos sobre la planificación para la reducción de riesgos y manejo de desastres
- Metodologías para analizar riesgos, impactos y consecuencias asociados a distintos tipos de desastres
- Origen, procesos y distribución espacial de los riesgos y peligros naturales tales como terremotos, huracanes y tormentas, inundaciones (riverinas, costeras y urbanas), derrumbes, marejada ciclónica, marejadas, sequía, y erosión costera
- Implicaciones del escenario del cambio climático y el aumento de la ocurrencia de eventos extremos sobre el comportamiento de varios de los riesgos naturales

- Impactos de eventos extremos sobre la definición de la vulnerabilidad física y social de las áreas geográficas
- Componentes básicos de un Perfil de Riesgo
- Relación entre un análisis espacial y temporal del perfil de riesgo y el diseño de planes y protocolos eficientes
- Políticas públicas y estrategias para el manejo y protección de infraestructura crítica
- Mitigación de riesgos asociados a la vulnerabilidad de la infraestructura

Destrezas

- Pensamiento lógico y crítico para el desarrollo de preguntas de investigación para las etapas de pre y post-desastres
- Análisis crítico de la información, literatura e investigación existente sobre manejo de desastres
- Evaluación de vulnerabilidades técnicas de la infraestructura crítica
- Aplicación de zonificación para mitigación de riesgos
- Proficiencia en el uso de Sistemas de Información Geográfica para la toma de decisiones en situaciones las fases asociadas a desastres naturales
- Análisis geográficos asociados a riesgos y desastres

Valores

- Prestar atención a los impactos de planificar, diseñar e implementar éticamente proyectos de investigación para examinar y evaluar los riesgos, impactos y consecuencias asociados a distintos tipos de desastres.
- Reconocer y analizar los retos y dilemas éticos principales relacionados a la planificación para desastres o catástrofes
- Entender y analizar los poderes del gobierno en situaciones de desastre, incluyendo las protecciones de los ciudadanos, personal y voluntarios
- Comprender los principios básicos para la planificación y la formación de política pública y evaluar cambios en política pública que han sido resultado de catástrofes.
- Aplicar herramientas y técnicas básicas de análisis a uno o más desastres o situaciones de catástrofe para identificar respuestas, decisiones y acciones moralmente apropiadas y éticas

Curricular Sequence

| Semestre/Periodo Código | Curso | Créditos |
|---|---|--|
| Verano o semestre previo | | |
| PLAN6xxx | Introducción a la Teoría y Práctica de la Planificación | 1 |
| Subtotal | | 1 |
| Primer Semestre | | |
| PLAN6xxx | Teoría de la Planificación en Desastres | 3 |
| PLAN6xxx | Riesgos y Amenazas Naturales | 3 |
| Subtotal | | 6 |
| Segundo Semestre | | |
| PLAN6XXX | Métodos de Investigación para la Planificación en Desastres | 3 |
| PLAN6XXX | Instrumentos de Reglamentación y Política Pública para Planificación en Desastres | 3 |
| Subtotal | | 6 |
| Tercer Semestre (escoger una electiva) | | |
| PLAN6XXX Electiva | Introducción a Infraestructura Crítica | 3 |
| PLAN6XXX Electiva | Desarrollo y Vulnerabilidad Social | 3 |
| PLAN6XXX | Seminario Profesional | 1 |
| Subtotal | | 4 |
| Total | | 16 de contar con 50% o más de los créditos de Maestría en Planificación; sino 17 créditos; en el tercer semestre se escoge una de dos electivas |

Employment opportunities and post-graduate studies

Los egresados del Certificado podrán emplear su conocimientos, destrezas y valores adquiridos tanto en la empresa privada como en el gobierno, y el tercer sector sin fines de lucro. Esto incluye consultoría, gestor de permisos, oficinas legales, agencias de gobierno estatal y federal, municipios, oficinas de manejo de emergencias, fundaciones, organizaciones comunitarias como especialistas, analistas, inspectores, gerentes, administradores, técnicos en las áreas de emergencia, mitigación, recuperación.

Admission and graduation requisites

Programa Conjunto de Maestría en Planificación y Certificado Académico tiene dos modalidades para ser admitidos. La primera está dirigida a estudiantes regulares que están matriculados en el Programa de Maestría de la EGP. Para matricularse en el Certificado deben tener 50% de los cursos de la maestría aprobados y contar con un índice académico mínimo de 3.0. En este caso, el estudiante solicitará admisión al Certificado mediante un formulario interno de la escuela, que contenga evidencia de los cursos aprobados al momento de la solicitud, a ser evaluado por el Comité de Admisiones con el visto bueno del mentor académico del estudiante.

La segunda opción está dirigida a estudiantes graduados, egresados de la EGP, o personas con maestría en áreas afines a la planificación, por ejemplo: arquitectura, ingeniería, derecho (*juris doctor*), administración pública, geografía, sociología, psicología social/comunitaria, geología, ciencias ambientales, o trabajo social, entre otras. Esta opción requiere que los interesados soliciten admisión a la EGP específicamente para el Certificado. Los requisitos incluyen los siguientes:

- Tener un grado de maestría con un índice académico de mínimo de 3.0. Para los interesados que no cuentan con un trasfondo en Planificación, se ofrecerá un curso introductorio tipo compendio que deberán aprobar con A o B antes de comenzar el Certificado.
- Complementar la solicitud de admisión en la plataforma del Decanato de Asuntos Académicos (*Applyyourself* <https://app.applyyourself.com/?id=upr-grad>). En ésta debe incluir su transcripción de crédito como evidencia de grados completados y una carta de recomendación.

Special fees

Los estudiantes deben pagar la cuota de tecnología y mantenimiento que suma \$72.00.

Financial Aid Available

Para el Certificado no hay ayudas económicas disponibles dado que no es conducente a un grado final.

Profesores con proyectos con subvenciones externas pueden optar por incluir en su presupuesto el cubrir los gastos del certificado.

Main officers and contact persons

- Mayra I. Crespo Rodríguez, Oficial de Asuntos Estudiantiles, EGP
787-764-0000 ext. 85111 mayra.crespo2@upr.edu
- Jenniffer Santos-Hernández, Ph.D., Directora
Programa del Certificado Académico Graduado en Planificación en Desastres
787-764-0000, ext. 87778 jenniffer.santos1@upr.edu
- Norma Peña, Ph.D., Directora
Escuela Graduada de Planificación
787-764-0000 ext. 85117 norma.penal@upr.edu

Faculty, academic degrees, and granting institutions

- Dr. Norma I. Peña Rivera
2005, Ph.D. Análisis de Políticas Públicas, especialización en planificación del transporte,
Universidad de Illinois – Chicago, Illinois USA
- Dr. Maritza Barreto Orta
1997, Ph.D. Ciencias Marinas (Geológico) Universidad de Puerto Rico, Recinto de Mayagüez
- Prof. Aurelio Castro Jiménez
2006, M.B.A. Sistemas de Información y Gerencia, Universidad del Sagrado Corazón, San Juan,
Puerto Rico
- Dr. Criseida Navarro Díaz
2005, Ph.D. Massachusetts Institute of Technology, Cambridge, MA
- Dr. Jenniffer M. Santos Hernández
2013, Ph.D. Sociology, University of Delaware, Newark, DE. Specialties: 1) Collective
Behavior, Social Movements, and Disasters, 2) Race and Ethnicity

- Dr. Robert Olshansky
1987, Ph.D. Urban and Regional Planning, University of California-Berkeley
- Dr. Raúl Santiago Bartolomei
2019, Ph.D. Urban Planning and Development, University of Southern California

Facilities

El Certificado se ofrece en las facilidades de la Escuela Graduada de Planificación en Plaza Universitaria, Torre Central – 7mo Piso en la Avenida Ponce de León, Esquina Avenida Universidad Río Piedras, Puerto Rico. Los estudiantes se pueden estacionar en el estacionamiento multipisos de Plaza Universitaria en el Lado Norte. O pueden estacionar dentro del Campus del Recinto luego de las 4:30pm cuando están disponibles para uso abierto. Además, la salida de la Estación Universidad del Tren Urbano ubica adyacente a la entrada de la Torre Central de Plaza Universitaria.

En el Piso 6 ubica la Biblioteca de Planificación Dr. Rafael Picó donde se encuentra la colección de revistas y libros de planificación actualizada. Además, se encuentra el Laboratorio de Computación y Centro de Datos Censales. En el Piso 2 de la Torre Sur de Plaza Universitaria se encuentra el Centro de Erosión Costera y Planificación.

Main Services

La EGP cuenta con una Oficial de Asuntos Estudiantiles que provee asistencia al estudiante en el proceso de matrícula y evalúa su progreso académico continuamente. También recientemente instituyó un Programa de Mentoría para aumentar la retención y reducir el tiempo para graduarse de los estudiantes. Los estudiantes matriculados en este Programa de Certificado tendrán acceso a estos servicios.

Además, la EGP cuenta con amplios y actualizados recursos de información y tecnología para satisfacer las necesidades de sus estudiantes y profesores. Estos se encuentran principalmente en la biblioteca, el laboratorio de computación, el Centro de Datos Censales I, y el Centro de Erosión Costera y Planificación. Los cuatro desempeñan un papel crucial para la enseñanza y los esfuerzos de investigación en la EGP.

XXVIII. Annex 9: Budget Narrative

UNIVERSIDAD DE PUERTO RICO

UNIDAD: Escuela Graduada de Planificación Dr. Salvador M. Padilla Escabí

PROPUESTA: CERTIFICADO ACADÉMICO POST-BACHILLERATO DE
PLANIFICACIÓN EN DESASTRES

AÑO FISCAL: 2020-2025

JUSTIFICACIÓN Y EXPLICACIÓN GENERAL DEL PRESUPUESTO ESTIMADO -
NUEVOS PROGRAMAS JUSTIFICACIÓN Y EXPLICACIÓN POR AÑOS

CONCEPTOS

DETALLES

| | |
|-------------------------|--|
| Servicios personales | Esta partida es la única que la propuesta contempla que tendrá algún costo. Cinco profesores pertenecen a la EGP, por lo cual se les dividiría su carga académica entre la maestría y el certificado durante los semestres que ofrezcan cursos, al menos a cuatro de ellos. Para el profesor que es externo a la EGP pero pertenece al sistema UPR, se le ofrecerá compensación adicional. Esta flexibilidad provoca sinergia a la misma vez. Como resultado, las proyecciones de esta partida son las máximas, proveyendo un escenario conservador. La mayoría de las compensaciones para los profesores de fuera del sistema UPR serán para ofrecer seminarios de un crédito, por lo que no representan una suma significativa, a la vez que le añade gran valor y atractivo al Certificado. |
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|---|--------|
| Aportaciones patronales beneficios empleados | y a |
|---|--------|

| | |
|---------------------------------------|--|
| Materiales uso educativo y de oficina | El impacto en uso de materiales educativos y de oficina no será significativo. La EGP tiene la capacidad de absorber al menos un 20% y un máximo de 60% de aumento en estudiantado. |
| Equipo educativo y otros | No se vislumbra la compra de equipo nuevo. |
| Mantenimiento de equipos | El equipo para el certificado es el mismo que de la maestría, el cual se incluye en el presupuesto de la EGP. No se vislumbra un aumento significativo en el uso, por lo tanto, en el mantenimiento. |
| Mejoramiento profesional | El mejoramiento profesional se subvencionará con fondos externos cuando estén disponibles de proyectos de investigación como parte del trabajo de los docentes en la EGP, para los de plantilla regular. |
| Recursos bibliográficos | Las actualizaciones del material bibliográfico disponible en la Biblioteca de la EGP se harán junto al de la maestría. La Biblioteca hace compras regularmente de libros con sus recursos. |
| Tecnología educativa | Se utilizan los recursos de EGP los cuales tienen capacidad de absorber mayor demanda. |
| Gastos de acreditación | La acreditación de la Maestría incluye al Certificado. |

XXIX. Annex 10: Student Learning Assessment Plan



DECANATO ASUNTOS ACADÉMICOS
DIVISIÓN DE INVESTIGACIÓN
INSTITUCIONAL Y AVALÚO

UNIVERSIDAD DE PUERTO RICO
RECINTO DE RÍO PIEDRAS

PLAN TRIANUAL DE AVALÚO DEL APRENDIZAJE ESTUDIANTIL

| | | | |
|---|---|--------------------------|------------------|
| Programa Académico Concentración: | Certificado Académico Post-bachillerato de Planificación en Desastres | Año Académico: | 2020-2023 |
|---|---|--------------------------|------------------|

| Dominio | 2020-2021 | 2021-2022 | 2022-2023 |
|---|------------------|------------------|------------------|
| Research | X | X | X |
| Critical thinking | X | X | X |
| Discipline content | X | X | X |
| Social Responsibility (Ethics, leadership) | X | X | X |

PLAN TRIANUAL DE AVALUO DEL APRENDIZAJE ESTUDIANTIL

| | | | |
|--|--|-----------------------|------------------|
| Programa Académico o Concentración: | Certificado Académico Post-bachillerato de Planificación en Desastres | Año Académico: | 2020-2021 |
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| Dominio de la Misión del Recinto | Cursos utilizados para recopilar la información | Objetivos del aprendizaje estudiantil del Programa | Criterios de evaluación (Rúbrica) | Acción transformadora a implementarse durante el segundo semestre (Considere los hallazgos del ciclo anterior) | Logros esperados (Métrica) |
|---|--|---|---|---|-----------------------------------|
| Research | Methods and Techniques for Disaster | Integrate research-related skills on disaster planning in the curriculum as part of student's competencies. | 1. Identify implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning. 2. Determine impacts of extreme events on the continuity and functioning of social, | | |

| Dominio de la Misión del Recinto | Cursos utilizados para recopilar la información | Objetivos del aprendizaje estudiantil del Programa | Criterios de evaluación (Rúbrica) | Acción transformadora a implementarse durante el segundo semestre (Considere los hallazgos del ciclo anterior) | Logros esperados (Métrica) |
|---|---|---|---|---|-----------------------------------|
| Critical thinking | 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning | Integrate research-related skills on disaster planning in the curriculum as part of student's competencies. | technical, and natural 1. Demonstrate logical and critical thinking for the development of research questions for the pre and post-disaster stages 2. Conducts critical analysis of existing information, literature and research on disaster management 3. Evaluates technical vulnerabilities of the critical infrastructure 4. Applies zoning for risk mitigation 5. Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters 6. Conducts geographic analysis associated with risks | | |

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|--------------------|---|---|--|--|--|
| | | | and disasters | | |
| Discipline content | <ol style="list-style-type: none"> 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning | <p>Promotes students' knowledge that incorporates the National Disaster Planning Frameworks as well as planning approaches to disasters and issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability.</p> | <ol style="list-style-type: none"> 1. Dominates fundamental concepts in disaster science and emergency management for planning 2. Discusses theoretical paradigms associated to the study of planning and disasters and natural hazards 3. Employs methodologies to analyze risks, impacts, and consequences associated with different types of hazards 4. Understands origin, processes and spatial distribution of natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion 5. Identifies implications of climate | | |

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| | | | <p>change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning</p> <ol style="list-style-type: none"> 6. Differentiates impacts of extreme events on the continuity and functioning of social, technical, and natural systems. 7. Develops basic components of a Risk Profile 8. Makes a relationship between a spatial and temporal analysis of the risk profile and the design of efficient plans and protocols 9. Familiarity with the National Incident Management System (NIMS), the National Preparedness Goal and System, and the National Planning Frameworks. | | |
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|---|---|--|--|--|--|
| Social Responsibility (Ethics, leadership) | 1. Risks and Threats 2. Methods and Techniques for Disaster Planning 3. Public Policy Framework and Regulation of Disaster Planning | Cultivate values in students related to disaster planning. | 1. Analyze the impacts of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of disasters 2. Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning 3. Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers 4. Evaluate changes in public policy that have resulted from catastrophes. 5. Apply basic | | |
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| | | | analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions | | |
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PLAN TRIANUAL DE AVALÚO DEL APRENDIZAJE ESTUDIANTIL

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|-------------------------------------|---|----------------|-----------|
| Programa Académico o Concentración: | Certificado Académico Post-bachillerato de Planificación en Desastres | Año Académico: | 2021-2022 |
|-------------------------------------|---|----------------|-----------|

| Dominio de la Misión del Recinto | Cursos utilizados para recopilar la información | Objetivos del aprendizaje estudiantil del Programa | Criterios de evaluación (Rúbrica) | Acción transformadora a implementarse durante el segundo semestre (Considere los hallazgos del ciclo anterior) | Logros esperados (Métrica) |
|----------------------------------|---|--|---|--|----------------------------|
| Research | Professional seminars | Promote academic discussions on current and emerging disaster planning issues through seminars that contribute in identifying potential research themes. | 1. Identify implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning. 2. Determine impacts of extreme events on the continuity and functioning of social, | | |

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| | | | technical, and natural | | |
| Critical thinking | 1. Risks and Threats | Applies critical thinking to disaster planning issues and identifies a diversity of solutions. | 1. Evaluates technical vulnerabilities of the critical infrastructure | | |
| Discipline content | 1. Risks and Threats 2. Introduction to Critical Infrastructure 3. Development and Social Vulnerability 4. Disaster Planning Theory | Promotes students' knowledge that incorporates the National Disaster Planning Frameworks as well as planning approaches to disasters and issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability. | 1. Dominates fundamental concepts in disaster science and emergency management for planning 2. Discusses theoretical paradigms associated to the study of planning and disasters and natural hazards 3. Employs methodologies to analyze risks, impacts, and consequences associated with different types of hazards 4. Understands origin, processes and spatial distribution of | | |

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| | | | natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion 5. Identifies implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning 6. Differentiates impacts of extreme events on the continuity and functioning of social, technical, and natural systems. 7. Develops basic components of a Risk Profile 8. Makes a relationship between a spatial and temporal analysis of the risk profile and the design of efficient plans and protocols | | |
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| | | | <p>9. Familiarity with the National Incident Management System (NIMS), the National Preparedness Goal and System, and the National Planning Frameworks.</p> <p>10. Analyzes public policies and strategies for the management and protection of critical infrastructure</p> <p>11. Recognizes mitigation of risks associated with infrastructure vulnerability</p> | | |
| Social Responsibility (Ethics, leadership) | 1. Risks and Threats | Cultivate values in students related to disaster planning. | <p>1. Analyze the impacts of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of</p> | | |

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| | | | <p>disasters</p> <p>2. Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning</p> <p>3. Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers</p> <p>4. Evaluate changes in public policy that have resulted from catastrophes.</p> <p>5. Apply basic analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions</p> | | |
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PLAN TRIANUAL DE AVALUO DEL APRENDIZAJE ESTUDIANTIL

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|-------------------------------------|---|----------------|-----------|
| Programa Académico o Concentración: | Certificado Académico Post-bachillerato de Planificación en Desastres | Año Académico: | 2022-2023 |
|-------------------------------------|---|----------------|-----------|

| Dominio de la Misión del Recinto | Cursos utilizados para recopilar la información | Objetivos del aprendizaje estudiantil del Programa | Criterios de evaluación (Rúbrica) | Acción transformadora a implementarse durante el segundo semestre (Considere los hallazgos del ciclo anterior) | Logros esperados (Métrica) |
|----------------------------------|---|---|---|--|----------------------------|
| Research | <ol style="list-style-type: none"> Professional seminars Methods and Techniques for Disaster Planning | <ol style="list-style-type: none"> Promote academic discussions on current and emerging disaster planning issues through seminars that contribute in identifying potential research themes. Integrate research-related skills on disaster planning in the curriculum as part of student's competencies. | <ol style="list-style-type: none"> Identify implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on disaster management planning. Determine impacts of extreme events on the continuity and functioning of social, | | |

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|--------------------|--|--|---|--|--|
| | | | technical, and natural | | |
| Critical thinking | <ol style="list-style-type: none"> Risks and Threats Methods and Techniques for Disaster Planning Public Policy Framework and Regulation of Disaster Planning | Applies critical thinking to disaster planning issues and identifies a diversity of solutions. | <ol style="list-style-type: none"> Demonstrate logical and critical thinking for the development of research questions for the pre and post-disaster stages Conducts critical analysis of existing information, literature and research on disaster management Applies zoning for risk mitigation Proficiency in the use of Geographic Information Systems for decision-making in situations the phases associated with natural disasters Conducts geographic analysis associated with risks and disasters | | |
| Discipline content | <ol style="list-style-type: none"> Methods | Promotes students' knowledge that | <ol style="list-style-type: none"> Dominates fundamental concepts in | | |

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|--|--|---|---|--|--|
| | <p>and Techniques for Disaster Planning 2. Public Policy Framework and Regulation of Disaster Planning 3. Introduction to Critical Infrastructure 4. Development and Social Vulnerability</p> | <p>incorporates the National Disaster Planning Frameworks as well as planning approaches to disasters and issues such as prevention, protection, mitigation, community preparedness, response, recovery, climate change adaptation, and sustainability.</p> | <p>disaster science and emergency management for planning 2. Discusses theoretical paradigms associated to the study of planning and disasters and natural hazards 3. Employs methodologies to analyze risks, impacts, and consequences associated with different types of hazards 4. Understands origin, processes and spatial distribution of natural hazards, such as earthquakes, hurricanes and storms, floods (riverine and coastal), landslides, storm surge, storm surge, drought, and coastal erosion 5. Identifies implications of climate change scenarios and of the increase in the frequency and intensity of extreme events on</p> | | |
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| | | | <p>disaster management planning 6. Differentiates impacts of extreme events on the continuity and functioning of social, technical, and natural systems. 7. Develops basic components of a Risk Profile 8. Makes a relationship between a spatial and temporal analysis of the risk profile and the design of efficient plans and protocols 9. Familiarity with the National Incident Management System (NIMS), the National Preparedness Goal and System, and the National Planning Frameworks. 10. Analyzes public policies and strategies for the management and protection of critical infrastructure</p> | | |
|--|--|--|--|--|--|



| | | | | | |
|--|--|--|--|--|--|
| | | | 11. Recognizes mitigation of risks associated with infrastructure vulnerability | | |
| Social Responsibility (Ethics, leadership) | 1. Methods and Techniques for Disaster Planning 2. Public Policy Framework and Regulation of Disaster Planning 3. Development and Social Vulnerability | Cultivate values in students related to disaster planning. | 1. Analyze the impacts of planning, designing, and implementing research projects ethically to examine and evaluate the risks, and consequences associated with different types of disasters 2. Recognize the main ethical challenges and dilemmas related to disaster or catastrophic planning 3. Analyze the powers of government in disaster situations, including the protections of citizens, staff, and volunteers | | |



| | | | | | |
|--|--|--|--|--|--|
| | | | 4. Evaluate changes in public policy that have resulted from catastrophes. 5. Apply basic analysis tools and techniques to one or more disasters or catastrophe situations to identify morally appropriate and ethical responses, decisions and actions | | |
|--|--|--|--|--|--|

Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-bachillerato de Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | AMENAZAS NATURALES Y RIESGOS | | |
|---|-------------------------|------------------------------|----------|--|
| CODIFICACIÓN | : | PLAN 6XXX | | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | | |
| DESCRIPCIÓN DEL CURSO: | | | | |
| <p>El curso se enfoca en proveer al estudiante conocimientos básicos sobre el origen, procesos, ocurrencia y distribución espacial de amenazas naturales y riesgos como terremotos, tsunamis, huracanes y tormentas tropicales, sistemas ciclónicos extra tropicales, inundaciones (riveriñas y costeras), derrumbes, marejada ciclónica, marejadas asociadas a eventos extra tropicales, sequías, erosión costera, entre otros. Se dará énfasis a entender el reto que presenta el cambio climático bio climático/ ocurrencia de eventos extremos y como estos afectan la vulnerabilidad física y social de un área geográfica. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | | |
| OBJETIVOS DE APRENDIZAJE: | | | | |
| <p>Al final del curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Explicar los riesgos y peligros naturales (origen, procesos y distribución espacial) tales como terremotos, huracanes y tormentas, inundaciones (riverinas y costeras), derrumbes, marejada ciclónica, marejadas, sequia, erosión costera, entre otros. 2. Analizar las implicaciones del escenario del cambio climático y el aumento de la ocurrencia de eventos extremos sobre el comportamiento sobre los riesgos. 3. Identificar los impactos de estos eventos sobre la definición de la vulnerabilidad física y social de las áreas geográficas. 4. Identificar los componentes básicos de un Perfil de Riesgo e índices de vulnerabilidad física y social. 5. Reflexionar críticamente sobre la importancia de realizar un análisis <u>espacial y temporal</u> del perfil de riesgo como base para el diseño de planes y protocolos eficientes. | | | | |
| Libro de Texto Principal | | | | |
| <p>Keller, E.A., Blodget, R.H., 2019, Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes. Pearson, Prentice Hall. ISBN-13: 978-1138057227</p> | | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | | |
| Tema | Distribución del tiempo | | | |
| | Presencial | Híbrida | En línea | |
| Tema 1. Introducción – Riesgos y amenazas naturales | 3 horas | 3 horas presencial | 3 horas | |
| Tema 2. Amenazas Naturales, Peligros, Riesgos y la Planificación | 3 horas | 3 horas en línea | 3 horas | |
| Tema 3. Estructura de la Tierra y Placas Tectónicas | 3 horas | 3 horas en línea | 3 horas | |
| Tema 4. Terremotos | 3 horas | 3 horas en línea | 3 horas | |
| Tema 5. Tsunamis | 3 horas | 3 horas en línea | 3 horas | |

| | | | |
|--|-----------------|---|----------------|
| Tema 6. Inundaciones | 3 horas | 3 horas en línea | 3 horas |
| Tema 7. Movimientos del terreno | 3 horas | 3 horas en línea | 3 horas |
| Tema 8. Subsidiencia | 3 horas | 3 horas presencial | 3 horas |
| Tema 9. Procesos Atmosféricos y Eventos Extremos | 3 horas | 3 horas en línea | 3 horas |
| Tema 10. Huracanes y Ciclones Extra-Tropicales | 3 horas | 3 horas en línea | 3 horas |
| Tema 11. Amenazas y Riesgos Costeros | 3 horas | 3 horas presencial | 3 horas |
| Tema 12. Clima y Cambio Climático | 3 horas | 3 horas en línea | 3 horas |
| Tema 13. Incendios | 3 horas | 3 horas en línea | 3 horas |
| Tema 14. Potencial evento astro-físico | 3 horas | 3 horas en línea | 3 horas |
| Tema 15. La continuidad de la vida humana | 3 horas | 3 horas presencial | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (presenciales = 26% y horas a distancia = 74%) | 3 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|--|---|--|
| <ul style="list-style-type: none"> • Seminarios • Discusiones en clase • Trabajos Escritos • Discusión de Artículos de Investigación • Material Audiovisual | <ul style="list-style-type: none"> • Módulos instruccionales en línea • Lecturas de artículos profesionales en línea • Videos instruccionales • Trabajos en grupo • Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> • Módulos instruccionales interactivos • Lecturas de artículos profesionales en línea • Videos instruccionales • Trabajos en grupo • Videoconferencias asincrónicas • Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|--|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje (Moodle) | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | No aplica | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

TÉCNICAS DE EVALUACIÓN:

| Presencial | Híbrida | En línea |
|---|---|---|
| Examen Parcial.....30% | Examen Parcial.....30% | Examen Parcial.....30% |
| Examen Final30% | Examen Final30% | Examen Final30% |
| Ejercicio:Evaluación Plan Multiriesgo Municipal Escrito.....20% | Ejercicio:Evaluación Plan Multiriesgo Municipal Escrito.....20% | Ejercicio:Evaluación Plan Multiriesgo Municipal Escrito.....20% |
| Informe Oral sobre la Evaluación de Plan Multiriesgo.....40% | Informe Oral sobre la Evaluación de Plan Multiriesgo.....40% | Informe Oral sobre la Evaluación de Plan Multiriesgo.....40% |
| Participación.....10% | Participación.....10% | Participación.....10% |
| Total.....100% | Total.....100% | Total.....100% |

| |
|---|
| ACOMODO RAZONABLE: |
| Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes. |
| INTEGRIDAD ACADÉMICA |
| La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas. |
| NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL |
| “La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”. |
| SISTEMA DE CALIFICACIÓN |
| A, B, C, D, F |
| BIBLIOGRAFÍA |
| <p>Tema 1: Introducción – Riesgos y Amenazas Naturales</p> <p>Keller, E.A., DeVecchio, D. (2019). Natural Hazards: Earth’s Processes as Hazards, Disasters and Catastrophes. Fifth Edition. New York, NY: Routledge. Chapter 1</p> <p>Palm, R., & Hodgson, M. (1993). Natural Hazards in Puerto Rico. <i>Geographical Review</i>, 83(3), 280-289. doi:10.2307/215730</p> <p>Tema 2: Amenazas Naturales: Peligros, Riesgos y la Planificación</p> <p>Sandoval, V. and Sarmiento, J.P. 2019. A neglected issue: Informal settlements, urban development, and disaster risk reduction in Latin America and the Caribbean. Contributing Paper to GAR.</p> |

López Marrero, T., Wisner, B. (2012). Not in the Same Boat: Disasters and Differential Vulnerability in the Insular Caribbean. *Caribbean Studies*, 40(2):129-168.

Tema 3: Estructura de la Tierra y Placas Tectónicas

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 2

Tema 4: Terremotos

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 3

Repositorio del terremoto de 1918. Red Sísmica de Puerto Rico. Mayagüez, PR: Universidad de Puerto Rico. Disponible en <http://redsismica.uprm.edu/Spanish/educacion/terremotospr/terremoto18.php>

Tema 5: Tsunamis

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 4

Red Sísmica de Puerto Rico. Tsunami: El Peligro Olvidado.

Tema 6: Inundaciones

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 6

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Jury MR (2015) Climatic trends in Puerto Rico: observed and projected since 1980. *Clim Res* 66:113-123. <https://doi.org/10.3354/cr01338>

Tema 7: Movimientos de Terreno

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 7

Matthew C. Larsen & Andrew Simon (1993) A Rainfall Intensity-Duration Threshold for Landslides in a Humid-Tropical Environment, Puerto Rico, *Geografiska Annaler: Series A, Physical Geography*, 75:1-2, 13-23, DOI: [10.1080/04353676.1993.11880379](https://doi.org/10.1080/04353676.1993.11880379)

Kirton, E., Cerovski-Darriau, C. Schulz, W., Coe, J., Kean, J. Godt, J., Thomas, M., Stephen, K. (2019). Landslides Triggered by Hurricane María. *GSA Today*, 29(6), DOI <https://doi.org/10.1130/GSATG383A>

Tema 8: Subsidiencia y suelos

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 8

Tema 9: Procesos Atmosféricos y Eventos Extremos

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 9

Tema 10: Huracanes y Ciclones Extra-Tropicales

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 10

Boose, E., Serrano, M., & Foster, D. (2004). Landscape and Regional Impacts of Hurricanes in Puerto Rico. *Ecological Monographs*, 74 (2), 335-352. Retrieved from www.jstor.org/stable/4539059

Tema 11: Amenazas y Riesgos Costeros

Keller, E.A., DeVecchio, D. (2019). *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes*. Fifth Edition. New York, NY: Routledge. Chapter 11

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Storlazzi, C.D., Reguero, B.J., Cole, A.D., Lowe, E., Shope, J.B., Gibbs, A.E., Nickel, B.A., McCall, R.T., Van Dongeren, A.R. and Beck, M.W. 2019. Rigorously Valuing the Role of U.S. Coral Reefs in Coastal Hazard Risk Reduction. *US Geological Survey, Open-File Report 2019-1027*, 42 p. ISSN 2331-1258 (online).

Webb, B., Douglass, S., Dix, B. and Asam, S. 2018. Nature-Based Solutions for Coastal Highway Resilience. White Paper. FHWA-HEP-18-037. 42 p.

Tema 12: Clima y Cambio Climático

Keller, E.A., DeVecchio, D. (2019). Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes. Fifth Edition. New York, NY: Routledge. Chapter 12

Appelquist, L.R., Balstrøm, T. and Halsnæs, K. 2016. Managing climate changes in coastal areas: The coastal hazard wheel decision-support system. United Nations Environment Programme & Lars Rosendahl Appelquist, 48 p. ISBN: 978-92-807-3593-2.

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Lee, V. and Davis, T. 2019. Integrating Social and Behavior Change in Climate Change Adaptation: An Introductory Guide. Chemonics for the Climate Change Adaptation Thought Leadership and Assessments (ATLAS), 21 p.

McAlpine, T.A. and Porter, J.R. 2018. Estimating Recent Local Impacts of Sea-Level Rise on Current Real-Estate Losses: A Housing Market Case Study in Miami-Dade, Florida. Population Research and Policy Review, v.37, 871–895. <https://doi.org/10.1007/s11113-018-9473-5>

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Tema 13: Incendios

Keller, E.A., DeVecchio, D. (2019). Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes. Fifth Edition. New York, NY: Routledge. Chapter 13

Tema 14: Posible Evento Astrofísico Event

Keller, E.A., DeVecchio, D. (2019). Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes. Fifth Edition. New York, NY: Routledge. Chapter 14

Tema 15: La continuidad de la vida humana

Otto, S. (2018). Adaptation, Speciation, and Extinction in the Anthropocene. Proceedings of the Royal Society, 285(1891).

Whyte, K. (2017). Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene. *English Language Notes* 55(1), 153-162. <https://www.muse.jhu.edu/article/711473>

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Jury MR (2015) Climatic trends in Puerto Rico: observed and projected since 1980. *Clim Res* 66:113-123. <https://doi.org/10.3354/cr01338>

Boose, E., Serrano, M., & Foster, D. (2004). Landscape and Regional Impacts of Hurricanes in Puerto Rico. *Ecological Monographs*, 74(2), 335-352. Retrieved from www.jstor.org/stable/4539059

McAlpine, T.A. and Porter, J.R. 2018. Estimating Recent Local Impacts of Sea-Level Rise on Current Real-Estate Losses: A Housing Market Case Study in Miami-Dade, Florida. *Population Research and Policy Review*, v.37, 871–895. <https://doi.org/10.1007/s11113-018-9473-5>

Whyte, K. (2017). Indigenous Climate Change Studies : Indigenizing Futures, Decolonizing the Anthropocene. *English Language Notes* 55(1), 153-162. <https://www.muse.jhu.edu/article/711473>

Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa de Certificado Académico Post-bachillerato de Planificación en Desastres

PRONTUARIO

| | | | | |
|---|--------------------------------|--|-----------------|--|
| TÍTULO DEL CURSO | : | DESARROLLO Y VULNERABILIDAD SOCIAL A DESASTRES | | |
| CODIFICACIÓN | : | PLAN 6XXX | | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | | |
| DESCRIPCIÓN DEL CURSO: | | | | |
| <p>Este curso provee al estudiante la oportunidad de entender el estudio de la vulnerabilidad social y su importancia para la planificación para la reducción de desastres. Examina cómo las personas o grupos tienen experiencias diferenciadas en situaciones de desastres y la importancia de sus capacidades para promover la resiliencia. Enfatiza en cómo desde la planificación se puede reducir la vulnerabilidad social a desastres. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | | |
| OBJETIVOS DE APRENDIZAJE: | | | | |
| <p>Al finalizar el curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Analizar los principales marcos teóricos y temáticas en el estudio de desarrollo y vulnerabilidad social a desastres. 2. Describir el origen, evolución y estado actual de la investigación sobre vulnerabilidad social y de su aplicación en la planificación para la reducción de desastres. 3. Discutir a fondo las categorías sociales asociadas a un nivel elevado de vulnerabilidad social a desastres. 4. Aplicar estrategias para identificar, empoderar y reducir la inequidad en poblaciones vulnerables, tomando en cuenta la diversidad y asegurando la inclusión. 5. Sintetizar las distintas técnicas y herramientas disponibles para la medición de la vulnerabilidad. la diversidad de factores que informan cómo grupos sociales se adaptan, enfrentan condiciones de riesgo y tienen experiencias extraordinarias en situaciones de desastres. 6. Describir organizaciones y programas para poblaciones vulnerables. 7. Generar una evaluación básica para una comunidad específica. 8. Elaborar un plan para reducir vulnerabilidad social a desastres de una comunidad. | | | | |
| Libro de Texto Principal | | | | |
| <p>Fuchs, S., Thaler, T. (2017). Vulnerability and Resilience to Natural Hazards. Cambridge, London: Cambridge University Press.</p> <p>Wisner, B., Blaikie, P., Cannon, T., Davis, I. (2004). At Risk: Natural Hazards, People's Vulnerability and Disasters. Second Edition. New York, NY: Routledge.</p> | | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | | |
| Tema | Distribución del tiempo | | | |
| | Presencial | Híbrida | En línea | |

| | | | |
|--|-----------------|--|-----------------|
| Tema 1: Introducción – Vulnerabilidad Social a Desastres – Una perspectiva o ciencia en desastres? | 3 horas | 3 horas presencial | 3 horas |
| Tema 2: Fundamentos teóricos | 3 horas | 3 horas en línea | 3 horas |
| Tema 3: Desarrollo, Riesgo y Sostenibilidad | 3 horas | 3 horas en línea | 3 horas |
| Tema 4: Resiliencia | 3 horas | 3 horas presencial | 3 horas |
| Tema 5: Componentes Ambientales de la Vulnerabilidad | 3 horas | 3 horas en línea | 3 horas |
| Tema 6: Justicia Ambiental | 3 horas | 3 horas en línea | 3 horas |
| Tema 7: Raza, Clase y Género | 3 horas | 3 horas presencial | 3 horas |
| Tema 8: Edad | 3 horas | 3 horas en línea | 3 horas |
| Tema 9: Discapacidad | 3 horas | 3 horas en línea | 3 horas |
| Tema 10: Lenguaje y alfabetismo | 3 horas | 3 horas en línea | 3 horas |
| Tema 11: Violencia | 3 horas | 3 horas en línea | 3 horas |
| Tema 12: Acercamientos Locales, Regionales, Nacionales y Globales a Índices de Vulnerabilidad | 3 horas | 3 horas en línea | 3 horas |
| Tema 13: Medición y Comunicación de la Vulnerabilidad Social a Desastres | 3 horas | 3 horas en línea | 3 horas |
| Tema 14: Diversidad e Inclusión en la Planificación para la Reducción de Desastres | 3 horas | 3 horas presencial | 3 horas |
| Tema 15: Planificación más allá de la vulnerabilidad institucionalizada | 3 horas | 3 horas presencial | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (presenciales = 33% y horas en línea = 67% %) | 45 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|---|---|--|
| <ul style="list-style-type: none"> • Seminarios • Discusiones en clase • Juegos Educativos • Trabajos Escritos • Discusión de Artículos de Investigación • Material Audiovisual | <ul style="list-style-type: none"> • Módulos instruccionales en línea • Lecturas de artículos profesionales en línea • Videos instruccionales • Trabajos en grupo • Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> • Módulos instruccionales interactivos • Lecturas de artículos profesionales en línea • Videos instruccionales • Trabajos en grupo • Videoconferencias asincrónicas • Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|--|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje (Ej.: Moodle) | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | Institución | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

| TÉCNICAS DE EVALUACIÓN: | | |
|--|----------------------------|----------------------------|
| Presencial | Híbrida | En línea |
| Tres Ensayos45% | Tres Ensayos45% | Tres Ensayos45% |
| Dos Asignaciones 15% | Dos Asignaciones 15% | Dos Asignaciones 15% |
| Proyecto Final20% | Proyecto Final20% | Proyecto Final20% |
| Participación en clase 15% | Participación en clase 15% | Participación en clase 15% |
| Asistencia 5% | Asistencia 5% | Asistencia 5% |
| Total.....100% | Total.....100% | Total.....100% |
| ACOMODO RAZONABLE: | | |
| <p>Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.</p> | | |
| INTEGRIDAD ACADÉMICA | | |
| <p>La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.</p> | | |
| NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL | | |
| <p>“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.</p> | | |
| SISTEMA DE CALIFICACIÓN | | |
| A, B, C, D, F | | |
| BIBLIOGRAFÍA | | |
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Tema 12: Acercamientos Locales, Regionales, Nacionales y Globales a Índices de Vulnerabilidad

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Disasters Journal <https://www.onlinelibrary.wiley.com/journal/14677717>
Natural Hazards Review <https://ascelibrary.org/journal/nhrefo>
International Journal of Mass Emergencies and Disasters <http://ijmed.org/>

Portales electrónicos importantes

Gender & Disaster Network <https://www.gdnonline.org/>
Center for Research on the Epidemiology of Disasters <https://www.cred.be/>
Disability-inclusion Disaster Risk Reduction Network <https://www.didrrn.net/>
Sendai Framework for Disaster Risk Reduction <https://www.undrr.org/>
Hazards and Vulnerability Research Institute
<http://artsandsciences.sc.edu/geog/hvri/front-page>

Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-bachillerato de Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | INFRAESTRUCTURA CRÍTICA EN EL MANEJO DE DESASTRES | | |
|--|-------------------------|---|----------|--|
| CODIFICACIÓN | : | PLAN 6XXX | | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | | |
| DESCRIPCIÓN DEL CURSO: | | | | |
| <p>Las situaciones de desastre se caracterizan por, entre otras cosas, la interrupción en las operaciones de la infraestructura que provee servicios esenciales para la ciudadanía, incluyendo agua potable, alimentos, recursos médicos, servicios sanitarios, energía eléctrica, transportación y telecomunicaciones, entre otros. Este curso facilitará una mirada crítica y abarcadora para entender la infraestructura crítica en toda su complejidad, incluyendo fallas en cascadas, interdependencias, dimensiones sociales y la gobernanza e instituciones que rigen la misma. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | | |
| OBJETIVOS DE APRENDIZAJE: | | | | |
| <p>Al finalizar el curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Explicar la diversidad y complejidad de los sistemas de infraestructura, su funcionamiento normal y posibles retos que pueden surgir en una situación de emergencia o desastre. 2. Analizar las interdependencias entre sistemas de infraestructura. 3. Entender la relación entre sistemas de infraestructura y sus servicios a la sociedad. 4. Discernir los roles institucionales que enmarcan la gobernanza de sistemas de infraestructura crítica. 5. Analizar riesgos asociados a fallas en cascadas en sistemas de infraestructura crítica. 6. Examinar críticamente la información, literatura e investigación existente sobre infraestructura crítica y manejo de desastres. 7. Identificar brechas de conocimiento sobre sistemas de infraestructura y manejo de desastres. | | | | |
| Libro de Texto Principal | | | | |
| Radvanovsky, R., McDougall, A. (2019). Critical Infrastructure: Homeland Security and Emergency Preparedness. Fourth Edition. Boca Ratón, FL: CRC Press. | | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | | |
| Tema | Distribución del tiempo | | | |
| | Presencial | Híbrida | En línea | |
| Tema 1. Introducción a la infraestructura crítica | 3 horas | 3 horas presencial | 3 horas | |
| Tema 2. Redes de Infraestructura en Puerto Rico | 3 horas | 3 horas en línea | 3 horas | |
| Tema 3. Infraestructura crítica en el manejo de desastres | 3 horas | 3 horas en línea | 3 horas | |
| Tema 4. Dimensión social de la infraestructura crítica | 6 horas | 6 horas en línea | 6 horas | |
| Tema 5. Interdependencia en la infraestructura crítica | 6 horas | 6 horas en línea | 6 horas | |
| Tema 6. Modelos y simulaciones para el manejo de infraestructura crítica | 6 horas | 3 horas presenciales 3 horas en línea | 6 horas | |
| Tema 7. Fallas en cascadas | 6 horas | 6 horas en línea | 6 horas | |

| | | | |
|---|-----------------|---|-----------------|
| Tema 8. Gobernanza y rol de las instituciones | 6 horas | 6 horas en línea | 6 horas |
| Tema 9. Infraestructura resiliente | 3 horas | 3 horas en línea | 3 horas |
| Tema 10. Presentación trabajo final | 3 horas | 3 horas presenciales | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (presenciales = 26% y horas a distancia = 74%) | 45 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|--|---|--|
| <ul style="list-style-type: none"> ● Explicaciones detalladas ● Plataforma electrónica <i>Slack</i> o <i>Moodle</i> ● Tareas Asignadas ● Presentaciones en <i>PowerPoint</i> | <ul style="list-style-type: none"> ● Módulos instruccionales en línea ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> ● Módulos instruccionales interactivos ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas ● Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|--|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje <i>Moodle</i> o <i>Slack</i> | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | No aplica | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

TÉCNICAS DE EVALUACIÓN:

| Presencial | Híbrida | En línea |
|---------------------------------|--------------------------------|---------------------------------|
| Examen Parcial40% | Examen Parcial40% | Examen Parcial40% |
| Trabajo Final40% | Trabajo Final40% | Trabajo Final40% |
| Participación en clase20% | Participación en clase.....20% | Participación en clase20% |
| Total.....100% | Total.....100% | Total.....100% |

ACOMODO RAZONABLE:

Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.

INTEGRIDAD ACADÉMICA

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notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. **Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.**

NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL

“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.

SISTEMA DE CALIFICACIÓN

A, B, C, D, F

BIBLIOGRAFÍA

Tema 1: Introducción a la Infraestructura Crítica

Radvanovsky, R., McDougall, A. (2019). Critical Infrastructure: Homeland Security and Emergency Preparedness. Fourth Edition. Boca Ratón, FL: CRC Press. Chapter 1 – Introduction to Critical Infrastructure Assurance and Protection

Wrobel, L., Wrobel, S. 2009. Disaster Recovery Planning for Communications and Critical Infrastructure. Norwood, MA: Artech House. Chapter 3 – What are we planning for?

Tema 2: Redes de Infraestructura en Puerto Rico

FEMA & Junta de Planificación. (2018). Mapas de infraestructura crítica. Available [Online]: <http://cedd.pr.gov/fema/index.php/infraestructura-critica-en-zona-inundable/>

Sarker, P., Lester, H. (2019). Post-Disaster Recovery of Power Systems Dependent Critical Infrastructures. Infrastructures, 4(30).

Central Office for Recovery, Reconstruction, and Resiliency – COR3. (2018). Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico. Available [Online]: <http://www.p3.pr.gov/assets/pr-transformation-innovation-plan-congressional-submission-080818.pdf>

Tema 3: Infraestructura Crítica en el Manejo de Desastres

Department of Homeland Security. (2018). Infrastructure Interdependency Assessment – Puerto Rico.

Hayes, B. (2014). Infrastructure: A field guide to the industrial landscape. New York: Ww Norton.

John F. Clinton, Georgia Cua, Víctor Huérfano, Christa G. von Hillebrandt-Andrade, José Martínez Cruzado; The Current State of Seismic Monitoring in Puerto Rico. Seismological Research Letters (2006) 77 (5): 532–543. doi: <https://doi.org/10.1785/gssrl.77.5.532>

Tema 4: Dimensión social de la Infraestructura Crítica

Zorrilla, C. D. (2017). The View from Puerto Rico — Hurricane Maria and Its Aftermath. *New England Journal of Medicine*, 377(19), 1801–1803. doi:10.1056/nejmp1713196

Santos-Burgoa, C., Goldman, A., Andrade, E., Barrett, N., Colon-Ramos, U., Edberg, M., García-Meza, A., Goldman, L., Roess, A., Sandberg, J., & Zeger, S. (2018). Ascertainment of the Estimated Excess Mortality from Hurricane Maria in Puerto Rico. Retrieved from https://hsrc.himmelfarb.gwu.edu/sphhs_global_facpubs/288

Tema 5: Interdependencia de la Infraestructura Crítica

Lewis, L. P. and Petit, F. Critical infrastructure interdependency analysis: Operationalizing resilience strategies. Contributing Paper to GAR 2019.

Radvanovsky, R., McDougall, A. (2019). *Critical Infrastructure: Homeland Security and Emergency Preparedness*. Fourth Edition. Boca Ratón, FL: CRC Press. Chapter 3 – Public-Private Partnerships; Chapter 12 - Interdependencies.

Rinaldi, S. M. (2004, January). Modeling and simulating critical infrastructures and their interdependencies. In 37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of the (pp. 8-pp). IEEE.

Tema 6: Modelos y simulaciones para el manejo de la infraestructura crítica

Radvanovsky, R., McDougall, A. (2019). *Critical Infrastructure: Homeland Security and Emergency Preparedness*. Fourth Edition. Boca Ratón, FL: CRC Press. Chapter 3 – Public-Private Partnerships; Chapter 13 – Climate Change. Yoe, C. (2019). *Principles of risk analysis: decision making under uncertainty*. CRC press.

Conference on Systems, Man and Cybernetics (IEEE Cat. No. 04CH37583) (Vol. 5, pp. 4047-4052). IEEE. American Society of Civil Engineers Puerto Rico Section. (2019). 2019 Infrastructure Report Card. Available [Online]: <https://www.infrastructurereportcard.org/wp-content/uploads/2019/11/2019-Puerto-Rico-Report-Card-Final.pdf>

Tema 7: Fallas en cascadas

Graham, S. (Ed.). (2010). *Disrupted cities: When infrastructure fails*. Routledge.

Emrich, C.T., Alvarez, S., Connolly Knox, C., Sadiq, A., Zhou, Y. (2020). Hurricane Irma and Cascading Effects. In Rubin, C. and Cutter, S.L. (Eds.) *U.S. Emergency Management in the 21st Century: From Disaster to Catastrophe*. New York, NY: Routledge.

Pescaroli, G., Alexander, D. (2016). Critical infrastructure, panarchies and the vulnerability paths of cascading disasters. *Natural Hazards*, 82: 175–192.

Pescaroli, G. and Kelman, I. (2017), How Critical Infrastructure Orients International Relief in Cascading Disasters. *Journal of Contingencies and Crisis Management*, 25: 56-6.

Tema 8: Gobernanza y rol de las instituciones

Radvanovsky, R., McDougall, A. (2019). *Critical Infrastructure: Homeland Security and Emergency Preparedness*. Fourth Edition. Boca Ratón, FL: CRC Press. Chapter 3 – Public-Private Partnerships.

Little, R. G. (2004, October). The role of organizational culture and values in the performance of critical infrastructure systems. In 2004 IEEE International.

Tema 9: Infraestructura Resiliente

National Institute for Standards and Technology. (2016). Community Resilience Planning Guide for Buildings and Infrastructure Systems (Vol I & II). NIST Special Publication 1190

Little, R. G. (2003, January). Toward more robust infrastructure: observations on improving the resilience and reliability of critical systems. In 36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of the (pp. 9-pp). IEEE.

Dixon, T. H. (2017). Curbing catastrophe: Natural hazards and risk reduction in the modern world. Cambridge University Press.

Recursos Electrónicos

FEMA & Junta de Planificación. (2018). Mapas de infraestructura crítica. Available [Online]: <http://cedd.pr.gov/fema/index.php/infraestructura-critica-en-zona-inundable/>

Central Office for Recovery, Reconstruction, and Resiliency – COR3. (2018). Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico. Available [Online]: <http://www.p3.pr.gov/assets/pr-transformation-innovation-plan-congressional-submission-080818.pdf>

John F. Clinton, Georgia Cua, Víctor Huérfano, Christa G. von Hillebrandt-Andrade, José Martínez Cruzado; The Current State of Seismic Monitoring in Puerto Rico. Seismological Research Letters (2006) 77 (5): 532–543. doi: <https://doi.org/10.1785/gssrl.77.5.532>

Santos-Burgoa, C., Goldman, A., Andrade, E., Barrett, N., Colon-Ramos, U., Edberg, M., Garcia-Meza, A., Goldman, L., Roess, A., Sandberg, J., & Zeger, S. (2018). Ascertainment of the Estimated Excess Mortality from Hurricane Maria in Puerto Rico. , (). Retrieved from https://hsrc.himmelfarb.gwu.edu/sphhs_global_facpubs/288
<https://www.infrastructurereportcard.org/wp-content/uploads/2019/11/2019-Puerto-Rico-Report-Card-Final.pdf>

Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-bachillerato en Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | INTRODUCCIÓN A LA TEORÍA Y LA PRÁCTICA DE PLANIFICACIÓN | |
|--|--------------------------------|---|-----------------|
| CODIFICACIÓN | : | PLAN 6XXX | |
| CANTIDAD DE HORAS/CRÉDITO | : | 15 horas / Un crédito | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | |
| DESCRIPCIÓN DEL CURSO: | | | |
| <p>Este seminario ofrece una introducción a la teoría de planificación para profesionales. Cubre los enfoques teóricos básicos de la planificación como un proceso de toma de decisiones, así como sus impactos en la sociedad y el territorio. El seminario incluye una perspectiva ética sobre la planificación y el papel del planificador, basado en un enfoque de estudio de caso sobre recuperación después de desastres. El estudiante tiene la oportunidad de aplicar la teoría de planificación a situaciones reales y contextuales que atiendan el problema de la planificación, roles del planificador, implicados, y alternativas para resolver los problemas de planificación. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | |
| OBJETIVOS DE APRENDIZAJE: | | | |
| <p>Al final del curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Analizar los fundamentos teóricos de la teoría de planificación, incluidos ambos, basados en la práctica de planificación (proceso y resultados), así como en relación con las perspectivas epistemológicas (actividad genérica, acción de planificación). 2. Aplicar habilidades de resolución de problemas utilizando marcos teóricos para proporcionar soluciones a los problemas de planificación contemporánea relacionados con el uso del suelo y el cambio climático, así como los que prevalecen, como la vivienda, el desarrollo económico y la equidad. 3. Identificar dilemas críticos de planificación ética relacionados con el papel de los planificadores en la toma de decisiones. | | | |
| Libro de Texto Principal | | | |
| <p>Gunder, M. (Ed.), Madanipour, A. (Ed.), Watson, V. (Ed.). (2018). The Routledge Handbook of Planning Theory. New York: Routledge, https://doi.org/10.4324/9781315696072</p> | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | |
| <i>Tema</i> | Distribución del tiempo | | |
| | Presencial | Híbrida | En línea |
| I. Historia de la planificación y acercamiento racional a la planificación | 3 horas | 3 horas presenciales | 3 horas |
| II. Planificación espacial | 2 horas | 2 horas en línea | 2 horas |
| III. Planificación estratégica | 2 horas | 2 horas en línea | 2 horas |
| IV. Justicia en la planificación | 2 horas | 2 horas en línea | 2 horas |
| V. Planificación como un asunto político | 2 horas | 2 horas en línea | 2 horas |
| VI. Lo público y lo común en planificación | 2 horas | 2 horas en línea | 2 horas |
| VII. Debate | 2 horas | 2 horas presenciales | 2 horas |

| | | | |
|--|--|--|----------------------|
| Total de horas contacto | 100% presencial | 15 horas (presencial = 33% y en línea = 67%) | 100% en línea |
| ESTRATEGIAS INSTRUCCIONALES: | | | |
| Presencial | Híbrido | En línea | |
| <ul style="list-style-type: none"> • Discusión en clase y debate • Trabajo escrito • Lecturas de artículos profesionales en línea • Videos instruccionales | <ul style="list-style-type: none"> • Discusión en clase y debate • Trabajo escrito • Módulos instruccionales en línea • Lecturas de artículos profesionales en línea • Videos instruccionales • Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> • Discusión en clase y debate • Trabajo escrito • Módulos instruccionales en línea • Lecturas de artículos profesionales en línea • Videos instruccionales • Videoconferencias asincrónicas y sincrónicas | |
| RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS: | | | |

| Recurso | Presencial | Híbrido | En línea |
|--|-------------------|------------------------|------------------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje (Moodle) | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | Institución | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante/Institución | Estudiante/Institución |

| TÉCNICAS DE EVALUACIÓN: | | | | | |
|--------------------------------|-------------|------------------------|-------------|------------------------|-------------|
| Presencial | | Híbrida | | En línea | |
| Participación en clase | 40% | Participación en clase |40% | Participación en clase | 40% |
| Debate | 20% | Debate |20% | Debate | 20% |
| Ensayo Final Escrito | 40% | Ensayo Final Escrito | 40% | Ensayo Final Escrito | . 40% |
| Total..... | 100% | Total..... | 100% | Total..... | 100% |

ACOMODO RAZONABLE:
Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.

INTEGRIDAD ACADÉMICA
La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que "la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor

académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. **Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.**

NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL

“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.

SISTEMA DE CALIFICACIÓN

A, B, C, D, F

BIBLIOGRAFÍA

Brooks, Michael P. Planning theory for practitioners. New York, NY; London: Routledge: imprint of Taylor & Francis Group, 2017.

FEMA, Pre-Disaster Recovery Planning Guide for Local Governments, February 2017 Chapter 3, Key Concepts for Recovery Planning.

Friedmann, John. The Uses of Planning Theory A Bibliographic Essay. Journal of Planning Education and Research 28:247-257 (2008) Association of Collegiate Schools of Planning

Gunder, M. (Ed.), Madanipour, A. (Ed.), Watson, V. (Ed.). (2018). The Routledge Handbook of Planning Theory. New York: Routledge, <https://doi.org/10.4324/9781315696072>

James Schwab, Hazard Mitigation: Integrating Best Practices into Planning PAS Report 560, Chapter 1. Hazard Mitigation: An Essential Role for Planners (2010)

James C. Schwab, Editor. Planning for Post-disaster Recovery: next Generation. PAS Report 576. Chapter 1 The vision of a resilient community; chapter 8 Next Steps in Creating Resilient Communities James C. Schwab American Planning Association (2014)

Philip R. Berke, Mark R. Stevens. Land Use Planning for Climate Adaptation: Theory and Practice. Journal of Planning Education and Research Volume: 36 issue: 3, page(s): 283-289, Issue published: September 1, 2016

Woodruff, S. C., Meerow, S., Stults, M., & Wilkins, C. (2018). Adaptation to Resilience Planning: Alternative Pathways to Prepare for Climate Change. Journal of Planning Education and Research. <https://doi.org/10.1177/0739456X18801057>

Referencias Electrónicas

Gunder, M. (Ed.), Madanipour, A. (Ed.), Watson, V. (Ed.). (2018). The Routledge Handbook of Planning Theory. New York: Routledge, <https://doi.org/10.4324/9781315696072>

Woodruff, S. C., Meerow, S., Stults, M., & Wilkins, C. (2018). Adaptation to Resilience Planning: Alternative Pathways to Prepare for Climate Change. *Journal of Planning Education and Research*.
<https://doi.org/10.1177/0739456X18801057>

Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad de Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-bachillerato de Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | MÉTODOS Y TÉCNICAS DE ANÁLISIS PARA EL MANEJO DE DESASTRES | |
|---|-------------------------|--|----------|
| CODIFICACIÓN | : | PLAN 6XXX | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | |
| DESCRIPCIÓN DEL CURSO: | | | |
| <p>Este curso expone al estudiante a la aplicación de herramientas metodológicas y técnicas de planificación que apoyan la reducción de desastres; incluyendo métodos cuantitativos, cualitativos y mixtos. El curso se divide en tres unidades o módulos: Técnicas de preparación y mitigación, Técnicas de Análisis de Dinámicas Espaciales, y Técnicas para la planificación post-desastre. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | |
| OBJETIVOS DE APRENDIZAJE: | | | |
| <p>Al finalizar el curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Aplicar técnicas de análisis para examinar el riesgo y la susceptibilidad a distintos eventos extremos. 2. Discernir la técnica apropiada para atender retos ligados a las distintas etapas del ciclo de desastres, reconociendo los límites empíricos de cada técnica. 3. Analizar críticamente la información, literatura e investigación existente sobre planificación para la reducción de desastres y manejo de emergencias. 4. Identificar brechas de conocimiento sobre manejo de desastres. | | | |
| Libro de Texto Principal | | | |
| Hicks, J., Peacock, W., Van Zandt, S., Grover, H., Schwarz, L., Cooper, J.T. (2014). Planning for Community Resilience: A Handbook for Reducing Vulnerability to Disasters. | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | |
| Temas | Distribución del tiempo | | |
| | Presencial | Híbrida | En línea |
| UNIDAD 1 / MODULO 1 | 3 horas | 3 horas | 3 horas |
| Tema 1. Técnicas para la planificación para la reducción de desastres | | (presenciales) | |
| Tema 2. Retos Investigativos, Éticos, y Metodológicos Claves | 3 horas | 3 horas | 3 horas |
| Tema 3. Desarrollo de Planes de Emergencia: Análisis de exposición y vulnerabilidad física | 3 horas | 3 horas | 3 horas |
| Tema 4. Desarrollo de Planes de Emergencia: Análisis de vulnerabilidad social | 3 horas | 3 horas | 3 horas |
| Tema 5. Avalúo de Planes de Mitigación | 3 horas | 3 horas | 3 horas |
| UNIDAD / MODULO 2 | 3 horas | 3 horas | 3 horas |
| Tema 6. Herramientas y estrategias de mitigación para planificadores | | | |

| | | | |
|---|-----------------|---|-----------------|
| Tema 7. Sistemas de Información Geográfica | 6 horas | 6 horas (presenciales) | 6 horas |
| Tema 8. Ciencia de Información Geográfica | 6 horas | 6 horas (presenciales) | 6 horas |
| UNIDAD 3 / MODULO 3 Tema 9. Retos en la medición de daños y en el estudio de procesos de recuperación | 3 horas | 3 horas | 3 horas |
| Tema 10. Modelos computacionales | 3 horas | 3 horas | 3 horas |
| Tema 11. Acercamientos cualitativos | 3 horas | 3 horas | 3 horas |
| Tema 12. Métodos cuantitativos | 3 horas | 3 horas | 3 horas |
| Tema 13. Métodos mixtos | 3 horas | 3 horas (presenciales) | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (18 presenciales = 40% y 27 horas a distancia = 60%) | 45 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|---|---|--|
| <ul style="list-style-type: none"> ● Seminarios ● Discusiones en clase ● Trabajos escritos ● Discusión de artículos de Investigación ● Materia audiovisual | <ul style="list-style-type: none"> ● Módulos instruccionales en línea ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> ● Módulos instruccionales interactivos ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas ● Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|--|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje (Ej. Moodle) | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | No aplica | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

TÉCNICAS DE EVALUACIÓN:

| Presencial | Híbrida | En línea |
|------------------------------------|---------------------------------------|-------------------------------------|
| 3 Mini proyectos.....45% | 3 Mini proyectos.....45% | 3 Mini proyectos.....45% |
| 3 Asignaciones para la casa ...30% | 3 Asignaciones para la casa 30% | 3 Asignaciones para la casa30% |
| Participación en clase15% | Participación en clase15% | Participación en clase..... 15% |
| Asistencias.....10% | Asistencias10% | Asistencias10% |
| Total.....100% | Total.....100% | Total.....100% |

ACOMODO RAZONABLE:

Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de

Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.

INTEGRIDAD ACADÉMICA

La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. **Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.**

NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL

“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.

SISTEMA DE CALIFICACIÓN

A, B, C, D, F

BIBLIOGRAFÍA

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National Institute of Environmental Health Disaster Response Research Program. <https://dr2.nlm.nih.gov>

Tema 2: Retos Investigativos, Éticos, y Metodológicos Claves

Gaillard, J.C., Peek, L. 2019. Disaster-zone research needs a code of conduct. *Nature*, 575:440-442.

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Santos-Hernández, J., Rodríguez, H. and Díaz, W. 2010. "Developing Social Vulnerability to Disasters in the Coastal Regions of Puerto Rico: Social, Political and Economic Processes." In Rivera and Demond (eds) *How Ethnically Marginalized Americans Cope with Catastrophic Disasters: Studies in Suffering and Resiliency*. Edwin Mellen Press, Ltd.

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FEMA Flood Map Service Center <https://msc.fema.gov/portal/home>

HAZUS <https://www.fema.gov/hazus>

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Huang, X., C. Wang, and Z. Li, 2019. Linking picture with text: tagging flood relevant tweets for rapid flood inundation mapping, *Proceedings of the International Cartographic Association* 2(45), doi: 10.5194/ica-proc-2-45-2019

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Abdalla, R. 2016. Evaluation of Spatial Analysis Applications for Urban Emergency Management. Springer Plus, 5:2081.

MÓDULO 3 / MODULE 3

Tema 9: Retos en la medición de daños y en el estudio de procesos de recuperación

Rubin, C. 2009. Long Term Recovery from Disasters – The Neglected Component of Emergency Management. *Journal of Homeland Security and Emergency Management*, 6(1).

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Cutter, S., Gall, M. 2015. Sendai Targets at Risk. *Nature Climate Change*, 5(8): 707-709.

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Tema 10: Modelos computacionales

El-Tawil, S. Fang, J., Aguirre, B., Best, E. 2017. A Computational Study of the Station NightClub Fire Accounting for Social Relations. *Journal of Artificial Societies and Social Simulation*, 20(4) 10, DOI: 10.18564/jasss.3519

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Tema 11: Acercamientos cualitativos

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Tema 12: Acercamientos cuantitativos

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Tema 13: Métodos mixtos

Lochhead, I., Hedley, N. 2018. Mixed Reality Emergency Management: Bringing Virtual Evacuation Simulations into Real-World Built Environments. *International Journal of Digital Earth*, 12:2, 190-208, DOI: [10.1080/17538947.2018.1425489](https://doi.org/10.1080/17538947.2018.1425489)

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HAZUS <https://www.fema.gov/hazus>

FEMA. (2016). Damage Assessment Operations Manual. Disponible en: <https://www.fema.gov/media-library-data/1459972926996-a31eb90a2741e86699ef34ce2069663a/PDAManualFinal6.pdf>

FEMA. (2018). Public Assistance Program and Policy Guide. Disponible en: https://www.fema.gov/media-library-data/1525468328389-4a038bbef9081cd7dfe7538e7751aa9c/PAPPG_3.1_508_FINAL_5-4-2018.pdf

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Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-bachillerato de Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | INSTRUMENTOS DE REGLAMENTACIÓN Y POLÍTICAS PÚBLICAS PARA LA PLANIFICACIÓN DE REDUCCIÓN DE DESASTRES | |
|---|-------------------------|---|----------|
| CODIFICACIÓN | : | PLAN 6XXX | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | |
| DESCRIPCIÓN DEL CURSO: | | | |
| <p>Este curso proporciona una visión general de los marcos regulatorios y los instrumentos de política pública que afectan la toma de decisiones gubernamentales antes, durante y después de los desastres. Se cubre la progresión de la política relacionada con los desastres y las herramientas conceptuales y analíticas que pueden informar la toma de decisiones gubernamentales en la planificación y gestión de la reducción de desastres. Enfatiza en las políticas y procedimientos claves de gestión y cómo Informan las decisiones de mitigación y, en última instancia, las experiencias de los afectados por los desastres. Los estudiantes serán introducidos a las políticas y documentos fundamentales municipales, nacionales y federales. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | |
| OBJETIVOS DE APRENDIZAJE: | | | |
| <p>Al final del curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Explicar los procesos asociados con la formulación, implementación de la gestión de desastres y planificación de la formulación de políticas. 2. Describir los cambios históricos críticos dentro de los esfuerzos de gestión de emergencias y los esquemas de políticas de desastres a nivel municipal, nacional y federal. 3. Identificar los esquemas actuales de políticas legales y de respaldo (leyes, políticas, procedimientos) a nivel municipal, nacional y federal. 4. Diferenciar los roles y responsabilidades de los diversos actores involucrados, en todos los niveles de gobierno, en las políticas de emergencia y desastres. 5. Esquematizar los problemas relacionados con el sistema político y las interrelaciones de los actores involucrados, en todos los niveles de gobierno, en las políticas de emergencia y desastres. | | | |
| Libro de Texto Principal | | | |
| Sylves, R. T. (2020). Disaster policy and politics: emergency management and homeland security. Thousand Oaks, CA: Sage Publications. | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | |
| Tema | Distribución del tiempo | | |
| | Presencial | Híbrida | En línea |
| Tema 1. Fundamentos de Política Pública sobre Desastres y Gobernanza: historia de políticas de desastres en Estados Unidos y Puerto Rico | 3 horas | 3 horas (presenciales) | 3 horas |
| Tema 2 . Organizaciones Públicas y Privadas Relacionadas a los Desastres | 3 horas | 3 horas en línea | 3 horas |

| | | | |
|---|-----------------|--|-----------------|
| Tema 3. Retos y Oportunidades para Políticas Públicas de Desastres | 3 horas | 3 horas en línea | 3 horas |
| Tema 4. Manejo de Incidencias y Planificación para la Reducción de Desastres bajo Esquema Nacional | 3 horas | 3 horas en línea | 3 horas |
| Tema 5. Integración e Interoperacionalidad en el Marco Nacional de Planificación y de Colaboraciones Entre Agencias | 3 horas | 3 horas (presenciales) | 3 horas |
| Tema 6. Políticas y Programas de Prevención | 3 horas | 3 horas en línea | 3 horas |
| Tema 7. Políticas y Programas de Protección | 3 horas | 3 horas en línea | 3 horas |
| Tema 8. Políticas y Programas Mitigación | 3 horas | 3 horas en línea | 3 horas |
| Tema 9. Políticas y Programas de Respuesta | 3 horas | 3 horas en línea | 3 horas |
| Tema 10. Servicios de Refugios y Emergencia: necesidades básicas y especiales | 3 horas | 3 horas en línea | 3 horas |
| Tema 11. Políticas y Programas de Desastres y Recuperación | 3 horas | 3 horas (presenciales) | 3 horas |
| Tema 12. Recuperación de la Vivienda luego de Desastres | 3 horas | 3 horas | 3 horas |
| Tema 13. Recuperación de Negocios luego de Desastres | 3 horas | 3 horas | 3 horas |
| Tema 14. Cambios en Políticas Públicas de Desastres luego de Eventos Mayores | 3 horas | 3 horas | 3 horas |
| Tema 15. Relaciones Internacionales y Desastres | 3 horas | 3 horas | 3 horas |
| Tema 16. Conclusiones y Próximos Pasos: retos actuales y futuros para políticas públicas de desastres | 3 horas | 3 horas (presenciales) | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (12 horas presenciales = 27% y 33 horas a distancia = 73%) | 45 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|--|---|--|
| <ul style="list-style-type: none"> ● Seminarios ● Intercambio de Ideas ● Lecturas requeridas ● Asignaciones escritas | <ul style="list-style-type: none"> ● Módulos instruccionales en línea ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> ● Módulos instruccionales interactivos ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Videoconferencias asincrónicas ● Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|---|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje Moodle | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |

| | | | |
|--|------------|------------|------------|
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | No aplica | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

| TÉCNICAS DE EVALUACIÓN: | | |
|--|---|---|
| Presencial | Híbrida | En línea |
| Asistencia y Participación Informada15% | Asistencia y Participación Informada15% | Asistencia y Participación Informada15% |
| Nota Informativa15% | Nota Informativa15% | Nota Informativa15% |
| Dos Reflexiones críticas y cortas20% | Dos Reflexiones críticas y cortas ... 20% | Dos Reflexiones críticas y cortas . 20% |
| Dos clases facilitadas20% | Dos clases facilitadas ...20% | Dos clases facilitadas . 20% |
| Trabajo Final y Presentación 30% | Trabajo Final y Presentación 30% | Trabajo Final y Presentación 30% |
| Total.....100% | Total.....100% | Total.....100% |
| ACOMODO RAZONABLE: | | |
| <p>Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.</p> | | |
| INTEGRIDAD ACADÉMICA | | |
| <p>La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.</p> | | |
| NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL | | |
| <p>“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.</p> | | |
| SISTEMA DE CALIFICACIÓN | | |
| A, B, C, D, F | | |

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Tema 13: Recuperación de Negocios luego de Desastres

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Universidad de Puerto Rico
 Recinto de Río Piedras
 Facultad del Decanato de Asuntos Académicos
 Escuela Graduada de Planificación
 Programa Certificado Académico Post-Bachillerato de Planificación en Desastres

PRONTUARIO

| TÍTULO DEL CURSO | : | TEORÍA DE PLANIFICACIÓN EN DESASTRES | | |
|---|-------------------------|--------------------------------------|----------|--|
| CODIFICACIÓN | : | PLAN 6XXX | | |
| CANTIDAD DE HORAS/CRÉDITO | : | 45 horas / Tres créditos | | |
| PRERREQUISITOS, CORREQUISITOS Y OTROS REQUIMIENTOS: | : | NINGUNO | | |
| DESCRIPCIÓN DEL CURSO: | | | | |
| <p>Este es el curso introductorio medular para los estudiantes del Certificado Graduado en Planificación para la Reducción de Desastres. El curso busca introducir y exponer al estudiante a las principales herramientas teóricas para la reducción de los desastres, a los marcos operacionales del manejo de emergencias, a las propiedades dinámicas, complejas y exponenciales que caracterizan el manejo de emergencias, a los determinantes del riesgo y a la producción social de los efectos de los desastres. Este curso se ofrecerá bajo las modalidades presencial, híbrida y en línea.</p> | | | | |
| OBJETIVOS DE APRENDIZAJE: | | | | |
| <p>Al final del curso el estudiante podrá:</p> <ol style="list-style-type: none"> 1. Discutir los principales marcos teóricos para la planificación encaminada a la reducción de los desastres. 2. Sintetizar la evolución teórica de los estudios sobre desastres. 3. Conocer los principales marcos teóricos usados para informar la planificación en las distintas etapas del ciclo de desastres. 4. Analizar los temas más importantes en el estudio de desastres y en la práctica de planificación encaminada a reducir el impacto de los eventos extremos. 5. Explorar cómo las decisiones relacionadas al ordenamiento del territorio y al uso del terreno, particularmente en Puerto Rico, distribuyen los riesgos. 6. Analizar estudios de casos de otros lugares. | | | | |
| Libro de Texto Principal | | | | |
| <p>Tierney, K. (2019). Disasters: A Sociological Approach. Cambridge, UK: Polity. Hicks, J., Peacock, W., Van Zandt, S., Grover, H., Schwarz, L., Cooper, J.T. (2014). Planning for Community Resilience: A Handbook for Reducing Vulnerability to Disasters. Washington, DC: Island Press.</p> | | | | |
| BOSQUEJO DE CONTENIDO Y DISTRIBUCIÓN DEL TIEMPO: | | | | |
| Tema | Distribución del tiempo | | | |
| | Presencial | Híbrida | En línea | |
| Tema 1: Planificación para la Reducción de Desastres | 3 horas | 3 horas presenciales | 3 horas | |
| Tema 2: Emergencias, Desastres, y Catástrofes: Conceptos claves | 3 horas | 3 horas en línea | 3 horas | |
| Tema 3: Evolución del pensamiento sobre desastres y amenazas naturales | 3 horas | 3 horas en línea | 3 horas | |
| Tema 4: Planificación para amenazas naturales y el reto de la adaptación al cambio climático | 3 horas | 3 horas en línea | 3 horas | |
| Tema 5: Resiliencia y Vulnerabilidad a Desastres | 3 horas | 3 horas en línea | 3 horas | |

| | | | |
|---|-----------------|---|-----------------|
| Tema 6: Comunicación de riesgo | 3 horas | 3 horas en línea | 3 horas |
| Tema 7: Preparación | 3 horas | 3 horas en línea | 3 horas |
| Tema 8: Mitigación | 3 horas | 3 horas presenciales | 3 horas |
| Tema 9: Planificación para poblaciones con necesidades especiales | 3 horas | 3 horas en línea | 3 horas |
| Tema 10: Respuesta | 3 horas | 3 horas en línea | 3 horas |
| Tema 11: Continuidad empresarial en situaciones de desastre | 3 horas | 3 horas en línea | 3 horas |
| Tema 12: Restauración y reconstrucción | 3 horas | 3 horas en línea | 3 horas |
| Tema 13: Vivienda | | 3 horas en línea | |
| Tema 14: Recuperación a largo plazo | 3 horas | 3 horas en línea | 3 horas |
| Tema 15: Lecciones de experiencia con el manejo de desastres | 3 horas | 3 horas presenciales | 3 horas |
| Evaluación final | 3 horas | 3 horas presenciales | 3 horas |
| Total de horas contacto | 45 horas | 45 horas (presenciales = 26% y horas a distancia = 74%) | 45 horas |

ESTRATEGIAS INSTRUCCIONALES:

| Presencial | Híbrido | En línea |
|--|--|---|
| <ul style="list-style-type: none"> ● Seminarios ● Discusiones en clase ● Trabajos Escritos ● Discusión de Artículos de Investigación ● Material Audiovisual | <ul style="list-style-type: none"> ● Módulos instruccionales en línea ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Tareas individuales ● Videoconferencias asincrónicas y sincrónicas | <ul style="list-style-type: none"> ● Módulos instruccionales interactivos ● Lecturas de artículos profesionales en línea ● Videos instruccionales ● Trabajos en grupo ● Tareas individuales ● Videoconferencias asincrónicas ● Reuniones sincrónicas |

RECURSOS MÍNIMOS DISPONIBLES O REQUERIDOS:

| Recurso | Presencial | Híbrido | En línea |
|--|-------------|-------------|-------------|
| Cuenta en la plataforma institucional de gestión de aprendizaje (Ej.: Moodle) | Institución | Institución | Institución |
| Cuenta de correo electrónico institucional | Institución | Institución | Institución |
| Computadora con acceso a internet de alta velocidad o dispositivo móvil con servicio de datos | Estudiante | Estudiante | Estudiante |
| Programados o aplicaciones: procesador de palabras, hojas de cálculo, editor de presentaciones | Estudiante | Estudiante | Estudiante |
| Bocinas integradas o externas | No aplica | Estudiante | Estudiante |
| Cámara web o móvil con cámara y micrófono | No aplica | Estudiante | Estudiante |

TÉCNICAS DE EVALUACIÓN:

| Presencial | Híbrida | En línea |
|------------------------------|------------------------------|------------------------------|
| Tres Ensayos45% | Tres Ensayos45% | Tres Ensayos45% |
| Dos Asignaciones15% | Dos Asignaciones15% | Dos Asignaciones15% |
| Proyecto Final.....20% | Proyecto Final.....20% | Proyecto Final.....20% |
| Participación en Clase ..15% | Participación en Clase ..15% | Participación en Clase ..15% |
| Asistencia ..5% | Asistencia ..5% | Asistencia ..5% |

| | | |
|--|----------------|----------------|
| Total.....100% | Total.....100% | Total.....100% |
| ACOMODO RAZONABLE: | | |
| <p>Según la Ley de Servicios Educativos Integrales para Personas con Impedimentos, todo estudiante que requiera acomodo razonable deberá notificarlo al profesor el primer día de clase. Los estudiantes que reciban servicios de Rehabilitación Vocacional deben comunicarse con el (la) profesor(a) al inicio del semestre para planificar el acomodo razonable y el equipo de asistencia necesario conforme a las recomendaciones de la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes. También aquellos estudiantes con necesidades especiales de algún tipo de asistencia o acomodo deben comunicarse con el (la) profesor(a). Si un alumno tiene una discapacidad documentada (ya sea física, psicológica, de aprendizaje o de otro tipo, que afecte su desempeño académico) y le gustaría solicitar disposiciones académicas especiales, éste debe comunicarse con la Oficina de Servicios a Estudiantes con Impedimentos (OSEI) del Decanato de Estudiantes, a fin de fijar una cita para dar inicio a los servicios pertinentes.</p> | | |
| INTEGRIDAD ACADÉMICA | | |
| <p>La Universidad de Puerto Rico promueve los más altos estándares de integridad académica y científica. El Artículo 6.2 del Reglamento General de Estudiantes de la UPR (Certificación Núm. 13, 2009-2010, de la Junta de Síndicos) establece que “la deshonestidad académica incluye, pero no se limita a: acciones fraudulentas, la obtención de notas o grados académicos valiéndose de falsas o fraudulentas simulaciones, copiar total o parcialmente la labor académica de otra persona, plagiar total o parcialmente el trabajo de otra persona, copiar total o parcialmente las respuestas de otra persona a las preguntas de un examen, haciendo o consiguiendo que otro tome en su nombre cualquier prueba o examen oral o escrito, así como la ayuda o facilitación para que otra persona incurra en la referida conducta”. Cualquiera de estas acciones estará sujeta a sanciones disciplinarias en conformidad con el procedimiento disciplinario establecido en el Reglamento General de Estudiantes de la UPR vigente. Para velar por la integridad y seguridad de los datos de los usuarios, todo curso híbrido y a distancia deberá ofrecerse mediante la plataforma institucional de gestión de aprendizaje, la cual utiliza protocolos seguros de conexión y autenticación. El sistema autentica la identidad del usuario utilizando el nombre de usuario y contraseña asignados en su cuenta institucional. El usuario es responsable de mantener segura, proteger, y no compartir su contraseña con otras personas.</p> | | |
| NORMATIVA SOBRE HOSTIGAMIENTO SEXUAL | | |
| <p>“La Universidad de Puerto Rico prohíbe el discrimen por razón de sexo y género en todas sus modalidades, incluyendo el hostigamiento sexual. Según la Política Institucional contra el Hostigamiento Sexual en la Universidad de Puerto Rico, Certificación Núm. 130, 2014-2015 de la Junta de Gobierno, si un estudiante está siendo o fue afectado por conductas relacionadas a hostigamiento sexual, puede acudir ante la Oficina de Procuraduría Estudiantil, el Decanato de Estudiantes o la Coordinadora de Cumplimiento con Título IX para orientación y/o presentar una queja”.</p> | | |
| SISTEMA DE CALIFICACIÓN | | |
| A, B, C, D, F | | |
| BIBLIOGRAFÍA | | |
| Tema 1: Planificación para la Reducción de Desastres | | |
| <p>Hicks, J., Peacock, W., Van Zandt, S., Grover, H., Schwarz, L., Cooper, J.T. (2014). Planning for Community Resilience: A Handbook for Reducing Vulnerability to Disasters. Chapter 1 – The New Era of Catastrophes.</p> <p>Rubin, C. (2020). Introduction. In Rubin, C. and Cutter, S. (Eds.) U.S. Emergency Management in the 21st Century: From Disaster to Catastrophe. London, UK: Routledge.</p> <p>McEntire, D. (2015). Disaster Response and Recovery: Strategies and Tactics for Resilience. Second Edition. Hoboken, NJ: John Wiley and Sons, Inc. Chapter 4 – Recognizing Alternative Management Approaches: Disaster Response and Recovery Theory.</p> | | |

Tema 2: Emergencias, Desastres, y Catástrofes: Conceptos claves

Gilbert, C. (1998). Studying Disaster: Changes in Conceptual Tools. In Quarantelli, E.L. (Ed.) What is a disaster? Perspectives on the Question. New York: NY: Routledge.

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Tema 3: Evolución del pensamiento sobre desastres y amenazas naturales

Davidson, R. (2015). Integrating Disciplinary Contributions to Achieve Community Resilience to Natural Disasters. Civil Engineering and Environment, 32(1-2):55-67.

Kendra, J., Nigg, J. (2014). Engineering and the Social Sciences: Historical Evolution of Interdisciplinary Approaches to Hazard and Disaster. Engineering Studies, 6(3): 134-158.

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Wachtendorf, T. (2019). A Case for the Grand Challenge of Disaster Science. In Kendra, J., Knowles, S., Wachtendorf, T. (Eds.) Disaster Research and the Second Environmental Crisis: Assessing the Challenges Ahead. Cham, Switzerland: Springer Nature.

Tema 4: Planificación para amenazas naturales y el reto de la adaptación al cambio climático

Glavovic, B., Smith, G. (2014). Learning from Natural Hazards Experience to Adapt to Climate Change. In Glavovic, B., Smith, G. (Eds.) Adapting to Climate Change: Lessons from Natural Hazards Planning. New York, NY: Springer.

Hicks, J., Peacock, W., Van Zandt, S., Grover, H., Schwarz, L., Cooper, J. (2014). Planning for Community Resilience: A Handbook for Reducing Vulnerability to Disasters. Washington, DC: Island Press. Chapter 7 – An Assessment of Hazard Mitigation Plans.

Tema 5: Resiliencia y Vulnerabilidad a Desastres

Tierney, K. (2019). Disasters: A Sociological Approach. Cambridge, UK: Polity. Chapter 6: Disaster Vulnerability, Chapter 7: Disaster Resilience: Concepts, Measures, and Critiques.

Hicks, J., Peacock, W., Van Zandt, S., Grover, H., Schwarz, L., Cooper, J.T. (2014). Planning for Community Resilience: A Handbook for Reducing Vulnerability to Disasters. Chapter 2 – What is Resilience?

Macias, J.M. (2015). Crítica a la Noción de Resiliencia en el Campo de Estudios de Desastres. Revista Geográfica Venezolana, 56(2): 309-325.

Otras lecturas recomendadas / Other recommended readings:

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Wisner, Blaikie, Cannon and Davis. (2004). Access to Resources and Coping in Adversity. In Wisner, B. et al. *At Risk: Natural hazards, people's vulnerability and disasters*. New York, NY: Routledge.

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