



***Northeastern University DECREE
Virtual Institute***

Fall 2023 Cohort Welcome Session

October 11th, 2023



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Viceroy Initiative

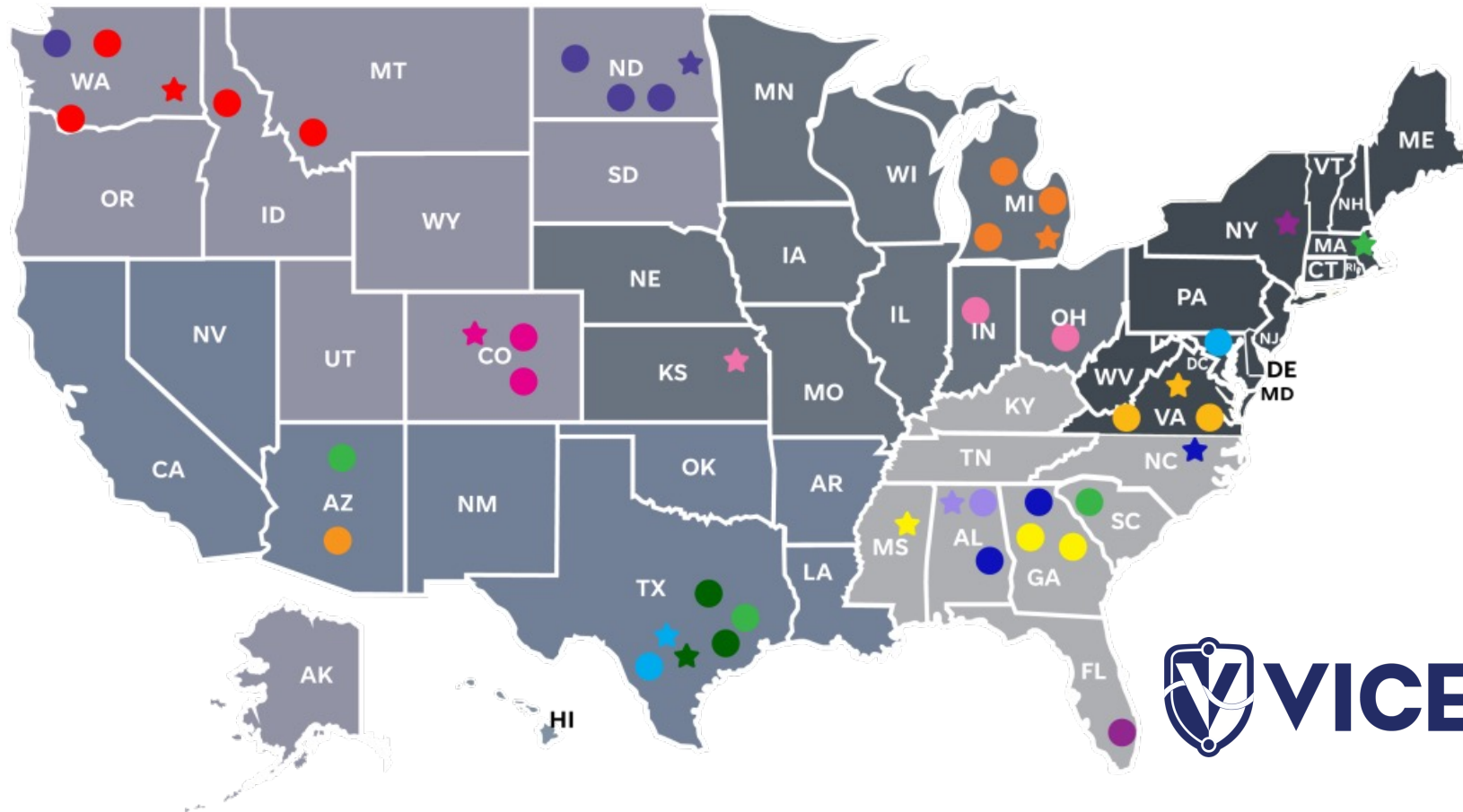
*Virtual Institutes for Cyber and Electromagnetic Spectrum
Research and Employ*

Mission

- Establish academic cyber institutes at institutions of higher learning, **to develop foundational expertise in critical cyber and spectrum operational skills for future military and civilian leaders** of the Armed Forces and the Department of Defense (DoD), including such leaders of the reserve components.



National Virtual Institutes





DECREE VI

*Department of Defense Electromagnetic and Cyber Research
and Experiential Education*

Our Mission

- Provide robust experiential research and education opportunities to build knowledge, skills, and abilities in DoD-relevant cybersecurity, EMS, data science, cryptography, and strategic foreign languages.
- Focus on Underrepresented minorities, female, and low-income students
- Also, Contribute to improve cyber education resources in Community Colleges (HBCU, HSI and MSI).



DECREE in Numbers

	Total Scholarships	Active Scholars	Total Graduated scholars	ROTC	Veteran	M	F
NEU	20	18	2	3	1	11	9
NAU	11	8	1	3	1	9	2
USC	5	4	1	3	0	3	2
UH	9	9	0	3	2	9	0
	45	39	4	12	4	32	13





Scholars Academic Program

Experiential Learning

- Competency – Scholars acquiring the knowledge and skills that facilitate their proficiency in the Virtual Institute areas of prioritization.
- Relevancy – Scholars' learning goes beyond solving the current problems and duties, pursuing deep-rooted and durable learning which enable them for the future evolution in the area.
- Preparedness – Upon completion of their learning process, scholars need be aware of workforce duties and roles and feel ready to apply them.
- Networking – Scholars will take advantage of the Virtual Institute ecosystem to strength their personal network with faculty, scholars, mentors, partners, etc



The intended outcomes are:

- **Competency** – Scholars acquiring the knowledge and skills that facilitate their proficiency in the Virtual Institute areas of prioritization.
- **Relevancy** – Scholars' learning goes beyond solving the current problems and duties, pursuing deep-rooted and durable learning which enable them for the future evolution in the area.
- **Preparedness** – Upon completion of their learning process, scholars need be aware of workforce duties and roles and feel ready to apply them.
- **Networking** – Scholars will take advantage of the Virtual Institute ecosystem to strength their personal network with faculty, scholars, mentors, partners, etc. to better understand the principal institutions and organizations that can be crucial for their career development.



Experiential Learning

	Competency	Relevancy	Preparedness	Networking
Course Curricula	✓	✓	✓	
Research	✓	✓	✓	✓
Mentorship		✓	✓	✓
Annual Symposium		✓	✓	✓

Table 1: Experiential Learning Outcomes that stem from DECREE VI initiatives

Scholars Academic Plan

- Application process
- Each scholar has an academic plan before being awarded
- Transcript recognition

Registration & Classes > Registration

Cross-Registration Agreements

The following form is to be used by both Northeastern students and external students participating in the exchange agreements in place with the following institutions:

- Boston College
- School of the Museum of Fine Arts at Tufts
- Tufts Graduate School of Biomedical Sciences
- Viceroy/DECREE Consortium Partner Institutions

The form must be completed in its entirety (including all required signatures) and returned to the Office of the Registrar for processing. The other host institution may also require additional documents to complete your registration.

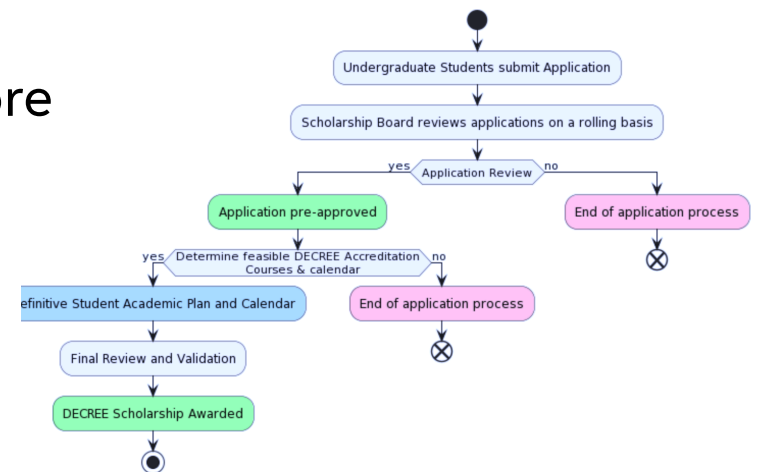
IMPORTANT ACTIONS

- [Cross-Registration Form](#) (Form)

CONTACT INFORMATION

Office of the University Registrar
registrar@northeastern.edu
617.373.2300
617.373.5351 (fax)

Mailing Address
Northeastern University
ATTN: Office of the Registrar, 230-271
360 Huntington Avenue
Boston, MA 02115-5000



<https://registrar.northeastern.edu/article/cross-registration-agreements/>

Scholarship Program and Curricula

- VICEROY DECREE VI offers a shared course curricula in the DoD-relevant areas of:
 - Cybersecurity
 - EMS
 - Data Science
 - Cryptography
 - Strategic Foreign Languages
- All courses included in the curricula are online
- Curricula offer will be reviewed every semester

courses by topic and university

	NAU	NU	UoSC	University Houston
IS	EEV 333 Electricity and Magnetism and 332 Electricity and Magnetism II	CT 4766 Security Wireless Mobile Systems	ETEC 445 - Advanced Networking	EECE 3327 Applied Electromagnetic Waves EECE 3328 Applied Electricity and Magnetism
Sec	CEN 334 Network Analysis CEN 438 Secure Software	CY 4990: Cybersecurity Capstone CY 3740/CY 3530: Systems Security	ETEC 564 Capstone Information Technology	EECE 5207 Introduction to Cybersecurity
PTG	PH 438 Cryptography and PCT CEN 440 Applied Cryptography			
DS				
DS		DS 3888 Found. of Data Science DS3888 Advanced Programming with Data		
Strategic Languages		CHNS 118U/119U Elementary Chinese 1&2	RUS 121/122 Elementary/Basic Prof. Russian	
Research	CEN 490/1340 Undergraduate Research	CY 2991 Research In Cybersecurity	ETEC 564 Capstone Project for Information Technology	



Mapping Curricula & NICE Framework

NICCS™

NATIONAL INITIATIVE FOR CYBERSECURITY CAREERS AND STUDIES

Education & Training

Workforce Development

Cybersecurity

Workforce Development > Workforce Framework for Cybersecurity (NICE Framework)

Workforce Framework for Cybersecurity (NICE Framework)

[Categories/Specialty Areas](#) | [Work Roles](#) | [Tasks](#) | [Knowledges](#) | [Skills](#) | [Abilities](#)

Prerequisites: Permission of the instructor.

CY 3740/CY 5130: Systems Security (4 credits)

Syllabus Offered Fall 2022

- Description: Offers a practical overview of enterprise computer security, operating systems security, and related topics. Applies concepts such as authentication, access control, integrity, and audit to the modern operating system. Discusses and demonstrates system, process, memory, and filesystem-level defenses and the attacks against them. Also discusses topics in systems security assessment and cloud security.
- Prerequisites: Good understanding of the Linux command line, python and C languages, and experience using docker containers.
- Workforce Framework for Cybersecurity (NICE Framework)

Knowledge ID	Work Role
K0290	Systems Security Analyst
	Cyber Defense Analyst

CY 4760/6760: Security of Wireless and Mobile Systems (4 credits)

<https://niccs.cisa.gov/workforce-development/nice-framework>

Scholarship Program and Curricula

- Multi-institution curriculum for all VI students
- Students earn course credits toward their “home degree”
- Courses will follow a virtual instructional method for Visiting VI students
- Course curriculum offer will be based on breadth and depth:

Breadth

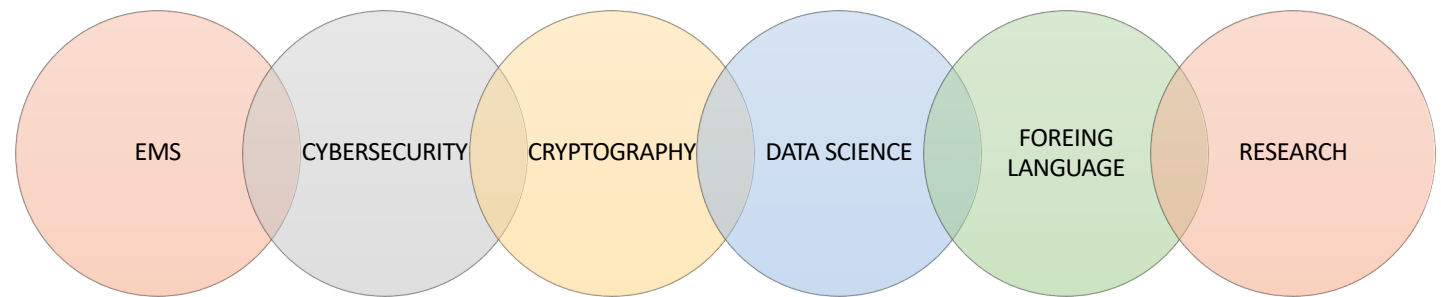
- Courses complement student's background or skills

Depth

- Courses amplifying and extending existing student's focus/background



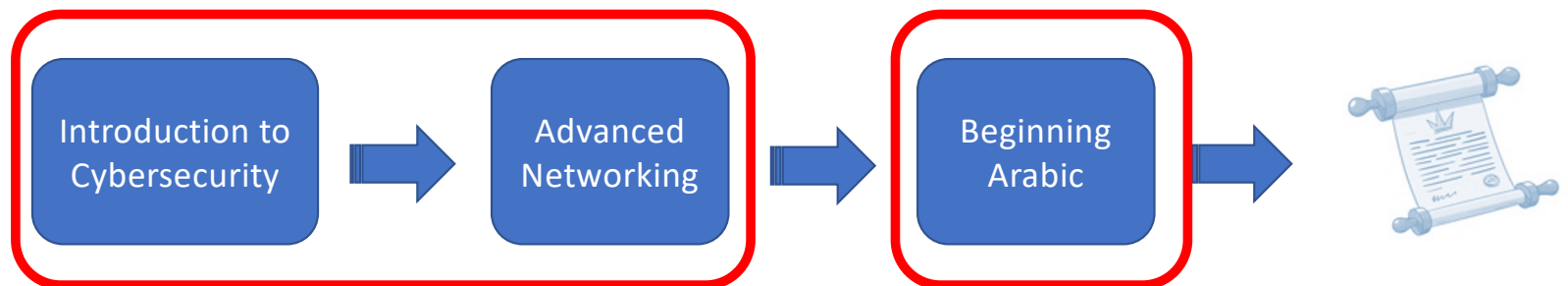
Scholarship Program and Curricula



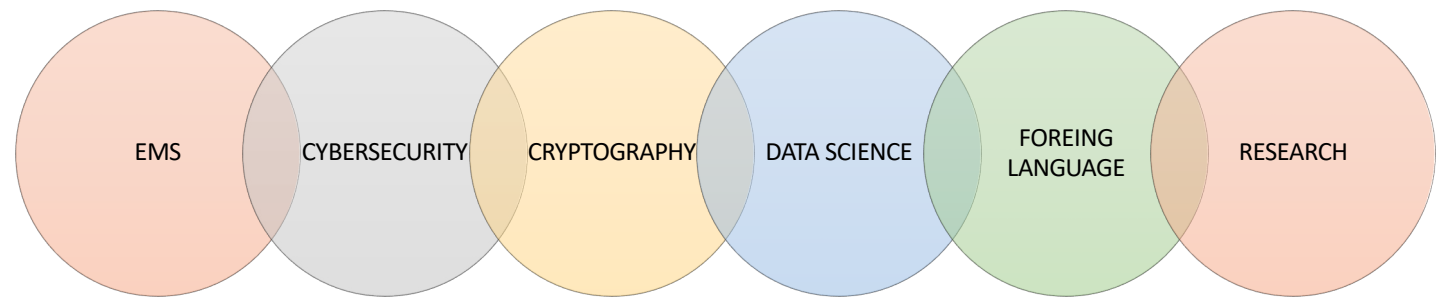
Junior in Electrical
Engineering
Program



Academic Plan includes at least two different areas



Scholarship Program and Curricula



Sophomore in
Computer Science
Program

Academic Plan includes three Viceroy areas



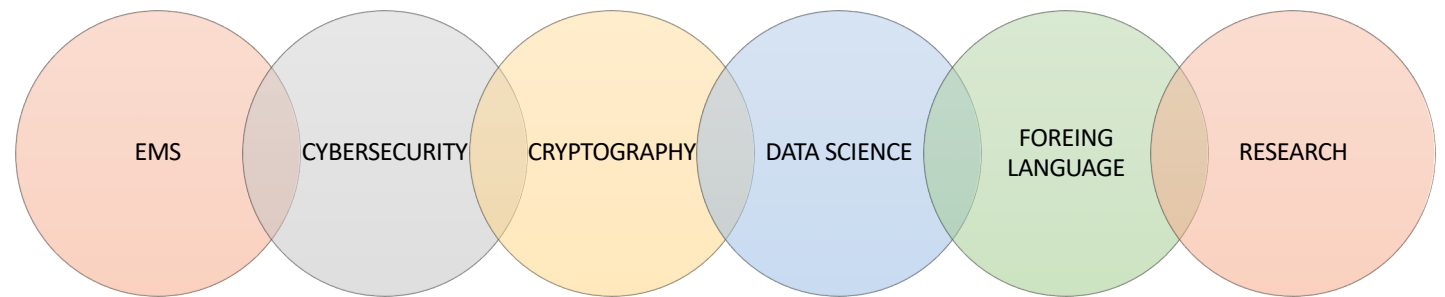
Security of
Wireless and
Mobile Systems

Independent
research studies

Elementary
Russian



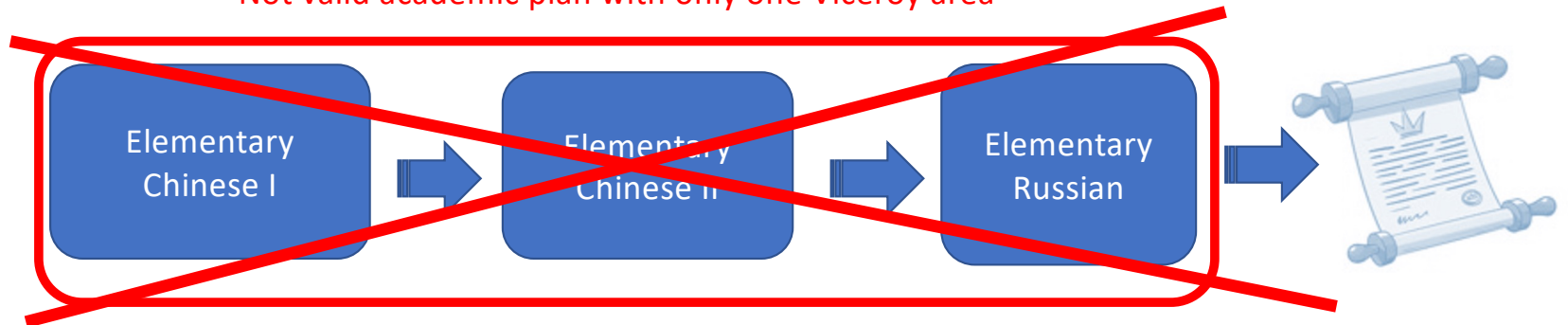
Scholarship Program and Curricula



Junior in Electrical
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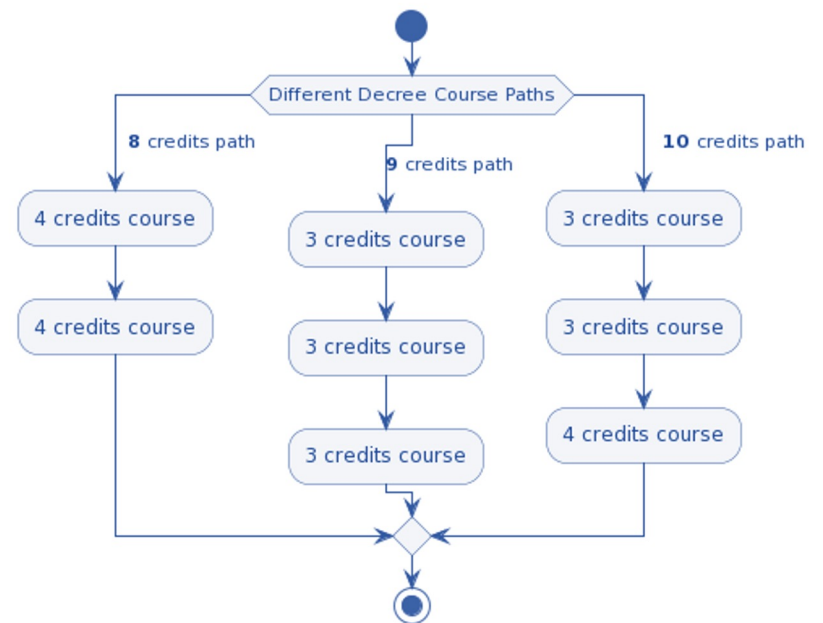


Not valid academic plan with only one Viceroy area



DECREE CREDITS REQUIRED

- These courses will follow a virtual **online**
Visiting VI students.
- Each scholar **needs to complete 8-10 Credits** institution curriculum (courses credits can be hours).
- **At least 1/3 of the credits** taken at a par



Existing transfers

- Northern Arizona University
 - CYB 310 Malware Analysis = CY 2990 (3 credits)
 - CYB 410 Secure Software = CY 3990
 - CYB499/CS485 Undergraduate Research = CY 2990 (3 credits)
 - CYB 402 Applied Cryptography = CY 4770
 - INF 638 Cryptography and Public Key Infrastructure = CY 4770
 - CYB 126/136 Secure Design I/II = CY 2990



Existing transfers

- South Carolina University
 - ITEC 445: Advanced Networking = CS 4700
 - RUS 121: Elementary Russian = RSSN 1101



Research

- Scholars are required to attend to **periodic research talks and seminars**, Intended to get them into cutting edge topics or specialization areas.
 - DECREE VICEROY faculty our network of collaborating organizations.
- Opportunity to develop research projects through Credit-bearing courses
 - [NEU] CY 2991. Research in Cybersecurity
 - Offers an opportunity to conduct introductory-level research or creative endeavors under faculty supervision.
 - [NAU] CYB499/CS485 Undergraduate Research
 - Students are encouraged to gain experience in their chosen field(s) by undertaking educational experiences outside of regular class work by pursuing credit for Individualize Studies.
 - [USC] ITEC 564: Project Management for Information System
 - Application of project management software, technologies, and practices to the design and implementation of real-world information technology projects.





Scholarships Overview

Scholarships

- Scholarship can be only provided while student is full load.
 - Any Viceroy-qualified course, at NEU or any partner institution, needs to be taken as part of the full-time course load.
 - Trying to overload (taking it as a fifth class) or taking it on co-op, means the student will need to pay for the DECREE course.
- When you submit your cross-registration form, the Registrar will enroll you into the NEU class which have been approved to transfer credits too.
 - Look closely to your enrollment to avoid **overloading or unloading** your “full load status”.



Scholarships

- Scholarships are intended to cover cost of attendance (COA)
 - Total amount it will cost a student to go to school for an academic period.
 - Tuition and Fees, room and board, books, rent, ...
- Scholarships amount is transferred directly to students' accounts
 - Unless some limitations, scholarship will be divided into two payments for two different semesters.
- Payments are ordered in November and March.
 - If you are under any special circumstances, please connect with me.





Mentorship

Mentorship

- Intended to support and guide scholars' careers
- Scholars will be supported by mentors while they are completing the VICEROY DECREE accreditation
 - define specific career objectives that are realistic, achievable, and measurable.
 - Help to develop the mentee's skills
 - How to Effectively communicate
 - Gain consciousness about workplace and jobs roles
 - Ask for guidance and support when needed
 - Gain Leadership skills in how to support/guide others
- Mentor's presentation session
 - To be conducted in October 25th 5 – 7pm
- Scholars-Mentors periodic interviews
 - ~3 follow up meetings between Oct. to Dec.





Annual Symposium

February 2024

DECREE Annual Symposium (Feb'24)

- Annual gathering to share Training, Research and career development activities.
- **Scholars and Faculty**
- Workshop/Seminars/CTFs with hands-on components
- **DECREE Scholars presentations about completed research activities**
- **Scholars' success stories**
- Career development panels
- Faculty and Partners invited talks





Decree Scholars Responsibilities

Scholars' responsibilities



Complete VI courses



Meet regularly with their DECREE VI mentors (bi-weekly)



Participate in DECREE Seminars and Events (monthly)



Participate in program evaluation activities (quarterly)



Participate in the annual VI engagement symposia (annually)



AND stay connected

Stay connected

- ✓ <https://nu-decree.github.io>
- ✓ <https://nu-decree.github.io/#calendar->
- ✓ <https://nu-decree.github.io/list.html>





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