Integrated Virtual Learning Environment for Cybersecurity (IVLE4C)

Being Developed @ UNCW by
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AMCIS TREO Brief

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OBSERVED CLASSROOM PROBLEM

Cybersecurity students do not understand the structure, operations and control of a modern digital enterprise.

Currently this knowledge is learned experientially on the job post graduation.

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WHY IS THIS A BIG DEAL?

It is impossible to defend a modern digital enterprise if it cannot be visualized and described.

There are material benefits to be gained if this problem can be solved!

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POTENTIAL SOLUTION BENEFITS

Improve cybersecurity pedagogy - teach enterprise cybersecurity first to establish a better context for learning single topic cybersecurity classes.

Accelerate student cybersecurity skill development so they are better prepared to contribute on day one of their employment.

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Big Question – How Can the Cybersecurity Classroom Experience Be Improved ???

Old School -
Passive Learning

New (Exciting) School –
Active Learning

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Hint – Look at What Others Are Doing IE Digital Cadaver Use In Medical Training

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What is the Analog then for Teaching "Enterprise" Cybersecurity ???

Use Models In the Classroom In Lieu of, or Supplemental to, Experiential Learning

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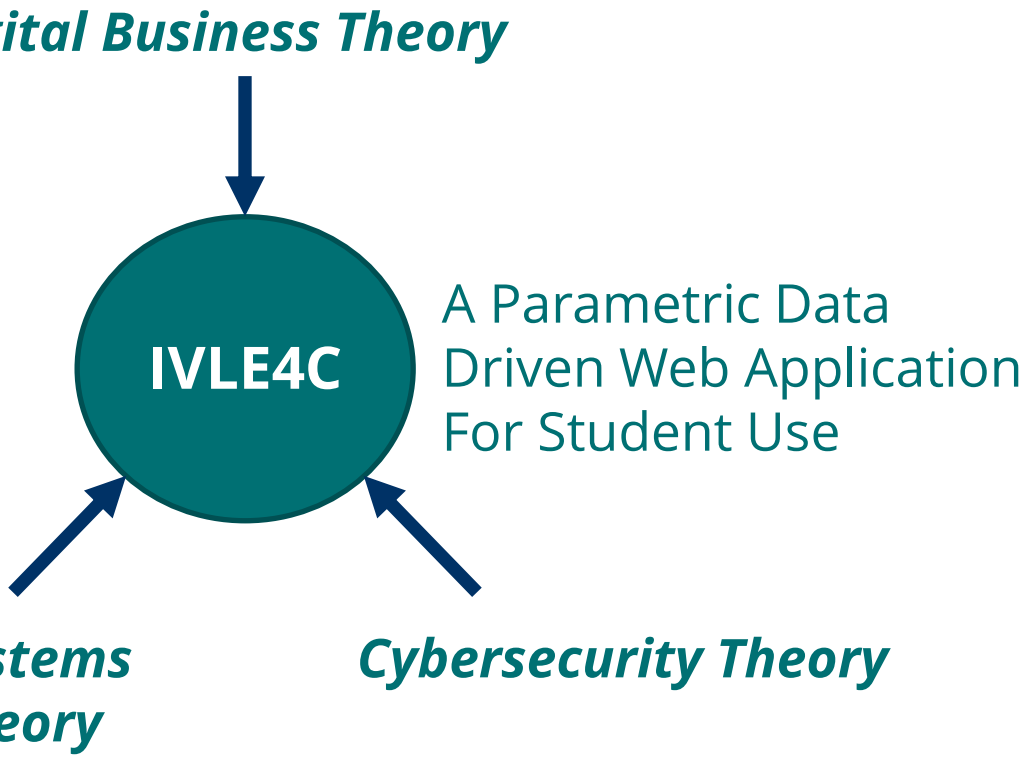
Create An Integrated Virtual Learning Environment for Cybersecurity (IVLE4C)



Teach Enterprise Cybersecurity By Design – Build Upon the Seminal Work by Nancy Mead Which Was IT Project Centric

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IVLE4C Risk Treatment Work Process

Four Step Work Process	Work Process Inputs From Exemplar or Targeted Research Findings	Work Process Outputs
Model	Research Findings About The Enterprise Being Defended	Descriptive Enterprise System Model (DESM)
Analyze	- Assets of Value - Named Threats - Untreated Vulnerabilities - Named Risks Ranked By Importance - Compliance Requirements - Security Requirements - Enterprise Risk Appetite	Risk Register
Design	Risk Register	Risk Treatment Plan Based On ISO 31000 Options and Selected Security Controls
Implement	Risk Treatment Plan	Plan of Action With Milestones (POAM)

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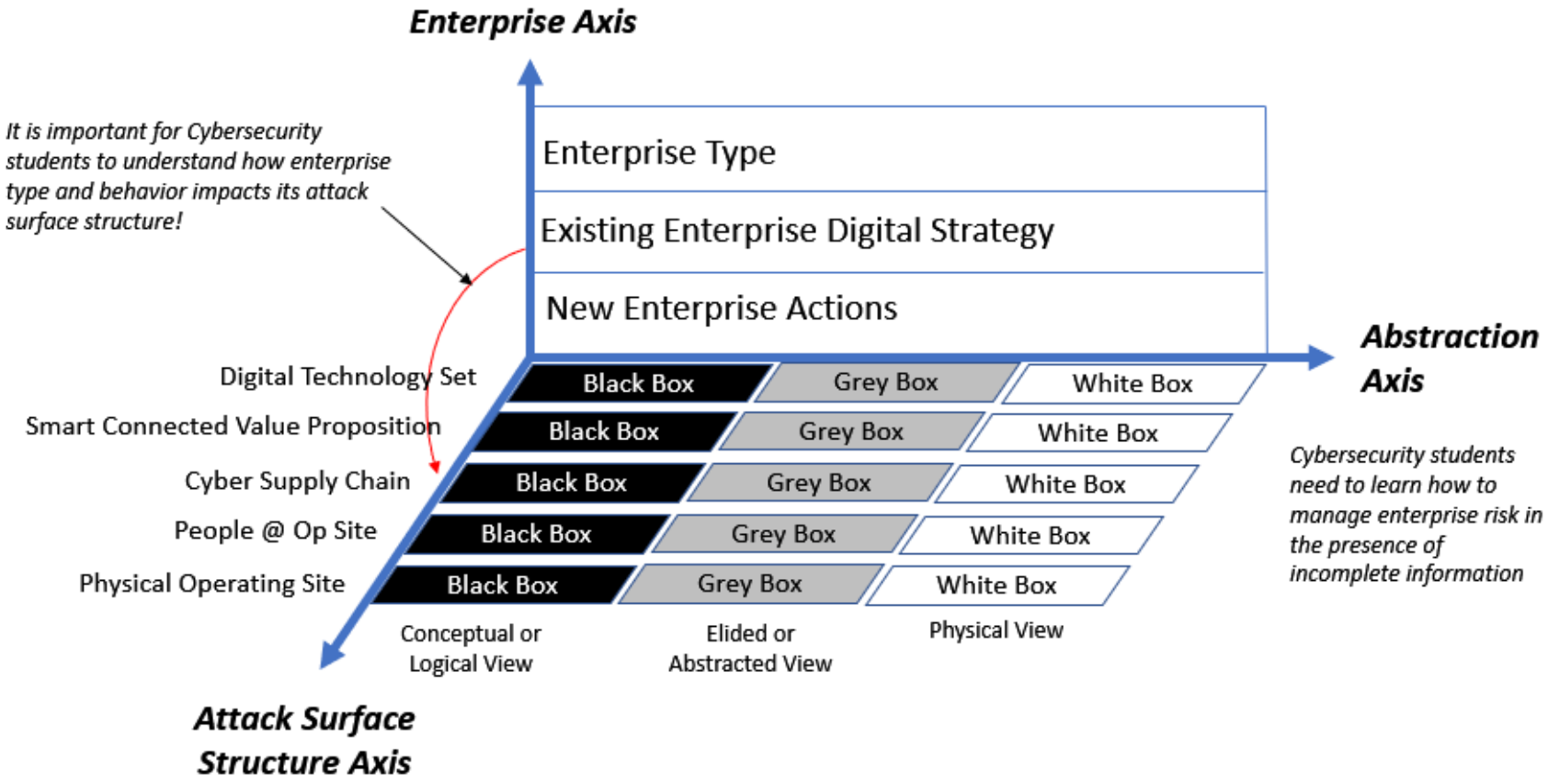
Proposed Descriptive Enterprise System Model (DESM) – an Artifact for Classroom Use



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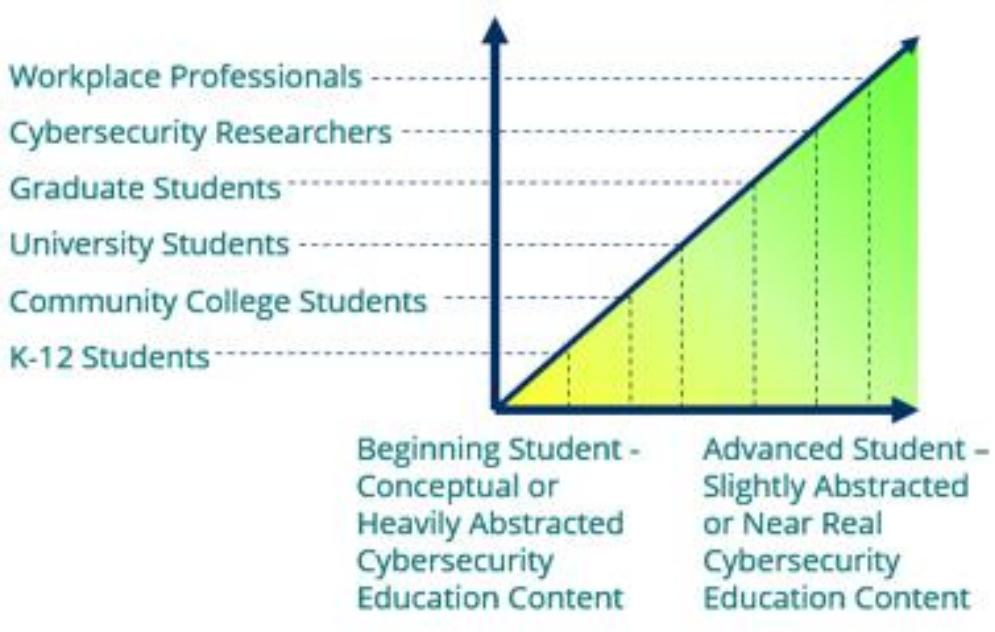
Create A Two Dimension DESM Library For Teacher and Student Classroom Use

IE Transportation Sector
Port of Los Angeles



DESMs Based On Enterprise Type ⟷ DESMs To Meet Student Learning Needs

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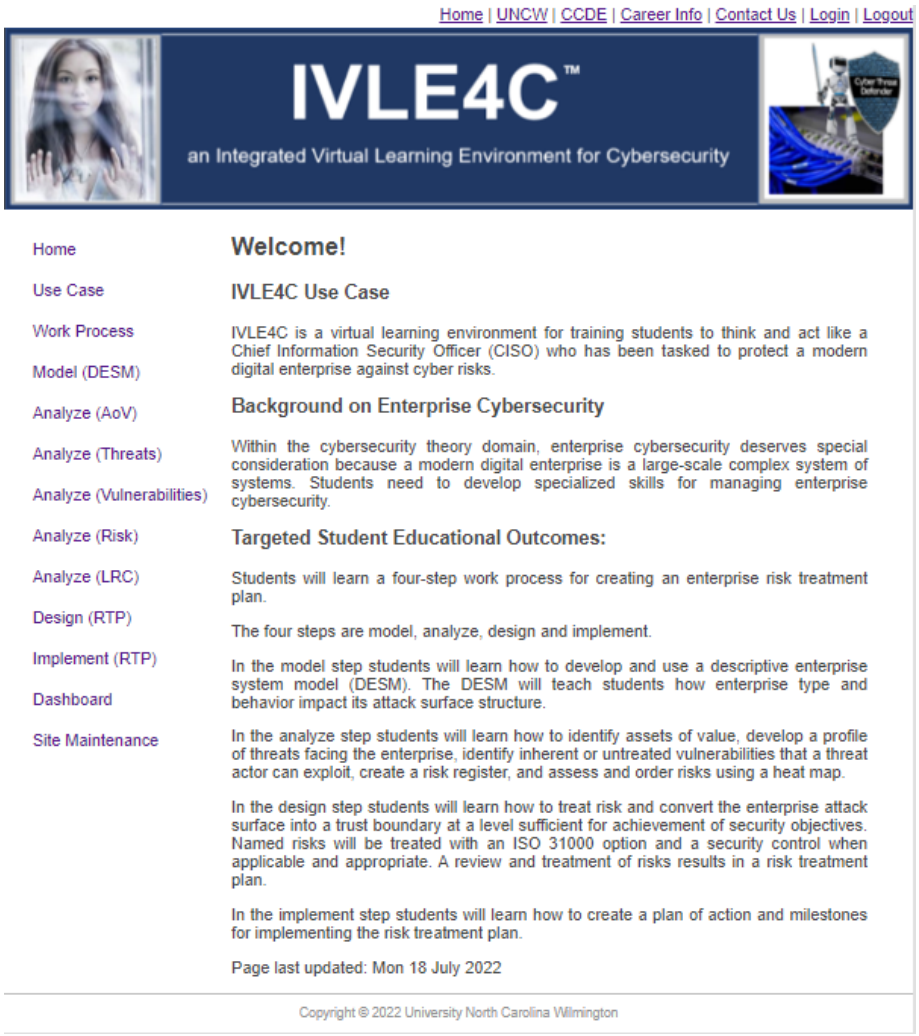
A Look at the Near Future

Website In Development



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ONE FINAL POINT FOR CONSIDERATION

My Dad taught me to use the best tool for the task at hand.

A cyber-range is network centric and IVLE4C is enterprise centric!

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IVLE4C Questions & Feedback

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