



# PATHWAYS TO COMPUTER SCIENCE LICENSURE IN NEW HAMPSHIRE

PAMELA COMEAU-EDUCATION CONSULTANT II

[Credentialing Knowledge Base/Help Desk](#)



## Pathway One Preparation Program

## Pathway Two Site-Based-Licensing Plan



## Pathway Three Portfolio/Oral Board





Pathway One  
Preparation Program

NHTI Post-Baccalaureate  
St Anselm Bachelor's degree

Cost Varies by Institution  
Timeline to licensure Varies by Institution

Could also do an Out of State Program-must lead to  
licensure



## Pathway II Site-Based-Licensing-Plan



### Cost

50.00 for Site-Based-Licensing- Plan SOE (NEWPATH-Bachelor's degree only until 2023  
Must submit transcripts (if not on file) BASA-Core testing if licensed in a CTE area.

120.00 for Intern Authorization

120.00 for full license upgrade

270.00

### Timeline to licensure

Minimum One School Year on an Intern Authorization

Maximum 3 School Years





# Pathway III Portfolio Oral-Board

## Cost

50.00 for Materials, Application Type Demonstrated Competencies-Portfolio/Oral Board  
Must submit Transcripts, BASA, and proof of at least 4 months full-time as a Computer Science Educator

500.00 for Oral Board  
120.00 for full license upgrade

670.00

## Timeline to licensure

Within 30 days of receiving materials portfolio is submitted  
Once oral board is complete within 7 days will receive licensure if approved



# Understanding EIS

|                                 |
|---------------------------------|
| <b>Educator Options</b>         |
| <b>Credentials</b>              |
| <b>Professional Development</b> |
| <b>Assignments (94)</b>         |
| <b>Certification Summary</b>    |
| <b>Degrees (3)</b>              |
| <b>Tests (1)</b>                |
| <b>Documents (22)</b>           |
| <b>Emails (11)</b>              |
| <b>Fees (11)</b>                |

← **Entering PD for Renewal when not employed**

← **Need Assignment for Pathway II and sometimes III**

← **View and Upload documents ([Upload/Download documents and print e-credentials](#))**

← **View EIS outgoing Emails (does not include Help-Desk)**

# Competencies to be met for all Pathways

## Competency Assessment Sheets

| COMPETENCY ASSESSMENT OF CANDIDATE'S STRENGTHS AND PROFESSIONAL DEVELOPMENT NEEDS<br>for<br><b>Ed 507.54 Computer Science Educator</b>   |              |                          |                          |
|--|--------------|--------------------------|--------------------------|
| (a) To be certified computer science educator for grades K-12, the candidate shall:  |              |                          |                          |
| (1) Have at least a bachelor's degree; and   |              |                          |                          |
| (2) Obtain certification through one of the alternatives in Ed 505.01 – Ed 505.05 after having met the requirements of (c) below:  |              |                          |                          |
| (b) For candidates seeking certification through an alternative 3, 4 or 5 pathway, the department of education shall assess the skills, competencies, and knowledge of candidates for certification as computer science educators by reviewing evidence, such as, but not limited to, college course work, documented professional experience, letters of recommendation, professional development hours or CEU's, and artifacts of professional practice. |              |                          |                          |
| COMPETENCY   | HOW ACQUIRED | Met                      | Not Met                  |
| (c) A candidate for certification as a computer science educator for grades K-12 shall have the following skills, competencies, and knowledge through a combination of learning activities such as but not limited to academic and supervised field-based experience in the following areas:   |              |                          |                          |
| (1) In the area of impacts of computing, the candidate shall have the ability to:  |              |                          |                          |
| a. Use computing to:   |              |                          |                          |
| (i) Express creativity;  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Solve problems;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Communicate;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (iv) Collaborate; and  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (v) Innovate in a variety of fields and careers;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Assess obstacles to equal access to computing as well as the impacts of these obstacles;  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Assess impacts of computing innovations and practices with respect to:  |              |                          |                          |
| (i) Beneficial and harmful effects;  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Ethical practices; and  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Privacy, security, and legal issues;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Keep current with knowledge on emerging technologies and their potential impacts.   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (2) In the area of algorithms and computational thinking, the candidate shall have the ability to:   |              |                          |                          |
| a. Analyze algorithmic processes and develop algorithms using:   |              |                          |                          |
| (i) Pattern recognition;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Problem decomposition; and  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Abstraction;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Convert between binary, decimal, and hexadecimal number systems;  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Use different formats to represent, develop and analyze algorithms including, but not limited to natural language, flowcharts, and pseudocode.  |              | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Use heuristic solutions to address computing limitations including, but not limited to, time, space, and solvability;   |              | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Use standard algorithms including, but not limited to, searching and sorting algorithms and analyze implementations of those algorithms for correctness, efficiency, and clarity;   |              | <input type="checkbox"/> | <input type="checkbox"/> |

|  |  |                          |                          |
|--|--|--------------------------|--------------------------|
| f. Use simple recursive algorithms including, but not limited to, fractals, Zeno's paradox, and Towers of Hanoi;             |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (3) In the area of programming, the candidate shall have the ability to:   |  |                          |                          |
| a. Write and modify computer programs in block-based and at least one text-based programming language;                       |  |                          |                          |
| b. Analyze computer programs in terms of:  |  |                          |                          |
| (i) Correctness;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Usability;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Readability;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iv) Extensibility;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (v) Modifiability; and   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (vi) Reusability;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Program using the following elements:   |  |                          |                          |
| (i) Basic control structures;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Standard operators;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Variables and data types;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iv) Functions; and  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (v) Data structures;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Write event-driven programs that respond to external events including, but not limited to, sensors, messages, and clicks; |  | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Use libraries and APIs;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Use and evaluate multiple development and execution environments;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Facilitate collaboration in the development of software;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Program user interactions with graphical and other user interface components;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Demonstrate knowledge of various software development models;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Model practices in software development, including:   |  |                          |                          |
| (i) User requirements analysis;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Program design;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Implementation and documentation;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iv) Testing and debugging; and  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (v) Evolution driven by feedback.  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Develop object-oriented programs;   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Model the process of program compilation and interpretation.  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (4) In the area of data and analysis, the candidate shall have the ability to:   |  |                          |                          |
| a. Model concepts of processing data, including:   |  |                          |                          |
| (i) Encoding   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Compression   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Encryption   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Create and use models and simulations.  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Work with data using computational tools, including to:   |  |                          |                          |
| (i) Collect, aggregate, and generate;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Store, manage, and manipulate;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (iii) Process, analyze, visualize, and   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (5) In the area of computing systems and networks, the candidate shall have the ability to:                                  |  |                          |                          |
| a. Evaluate and compare computing systems  |  | <input type="checkbox"/> | <input type="checkbox"/> |

|   |  |                          |                          |
|---|--|--------------------------|--------------------------|
| using various criteria.   |  |                          |                          |
| b. Model computing systems in terms of:   |  |                          |                          |
| (i) Hardware and software abstraction layers; and   |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Computer program execution (fetch-decode-execute cycles);  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Evaluate and compare local, network, and cloud computing and storage;  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Model computer networks in terms of:   |  |                          |                          |
| (i) Protocol stack components; and  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| (ii) Network protocols, such as, transmission control protocol/internet protocol (TCP/IP), domain name servers (DNS), and hypertext transfer protocol secure (HTTPS); |  | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Demonstrate fundamental concepts of cybersecurity including, but not limited to, confidentiality, integrity, availability, non-repudiation, and authentication.    |  | <input type="checkbox"/> | <input type="checkbox"/> |

# Complete Site Based Licensing Plan

- Cover Signature Page
- Individual Professional Development Plan
  - Competency Sheets
- Proof of completed items

Other items of consideration for a plan to be considered complete:

Personal experience is not accepted we ask how the competency was met by how the knowledge of the competency was gained. We look for how a competency was met, not that it is put into practice.

Please note lesson plans and curriculum work will not be sufficient as an activity or evidence.

Forms can be found here: [Site-Based Licensing Plan \(SBLP\) Overview](#)  
[Step by Step Site-Based Licensing Plan Instructions](#)



## Site-Based Licensing Plan Items to consider

**Must be employed as a Computer Science Teacher and have assignment in EIS**

**Must have an EEL Computer Science Teacher as a mentor [Educator Search](#)**

**Plan must be uploaded by Superintendent or Head of School (private/charter schools)  
Once uploaded the DOE will review for completeness and met competencies**

**Accepted, Incomplete, Revision Request**

**Experience and Lesson Plans are not proof of a competency**

**No Narratives**

**Must be on an Intern Authorization for one full school year.**

**Does not have to be all coursework, webinars, Professional Readings, and other PD is accepted.**

# Competency Assessment sheets Site Based Licensing Plan Competency Sheets Basic overview

Met Not

|  |      |  |                                  |                                     |                                     |
|--|------|--|----------------------------------|-------------------------------------|-------------------------------------|
|  |      | using various criteria.  |                                  |                                     | met                                 |
|  | b.   | Model computing systems in terms of:   |                                  |                                     |                                     |
|  | (i)  | Hardware and software abstraction layers; and  |                                  | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | (ii) | Computer program execution (fetch-decode-execute cycles);  |                                  | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | c.   | Evaluate and compare local, network, and cloud computing and storage:  |                                  | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | d.   | Model computer networks in terms of:   |                                  |                                     |                                     |
|  | (i)  | Protocol stack components; and   |                                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|  | (ii) | Network protocols, such as, transmission control protocol/internet protocol (TCP/IP), domain name servers (DNS), and hypertext transfer protocol secure (HTTPS); |                                  | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | e.   | Demonstrate fundamental concepts of cybersecurity including, but not limited to, confidentiality, integrity, availability, non-repudiation, and authentication.  | <b>CIS 230 Cybersecurity UNH</b> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

| Competency to be Met  | Activity to be Done              | Expected Completion Date | Documentation of Completion |
|-----------------------|----------------------------------|--------------------------|-----------------------------|
| c5dl Stack Components | EDX course PennX Data Structures | June 2022                | Certificate of Completion   |



IPDP Example

# Portfolio Oral Board

## Items to consider

\*\*Competencies must all be met

Narratives with Professional Experience, Professional Development and Coursework

Not passing the board, you are given areas of need and can re-apply after completion of items in need

Be aware of 30 day timeline

Board is made up of 3 Computer Science educators with varied experience



# DIFFERENCES BETWEEN PATHWAY II AND III

## SITE BASED LICENSING PLAN

- 290.00
- Mentor Needed
- Time to complete competencies
- Professional Development and Coursework
- Must be Employed and have Assignment in EIS with support of Senior Educational Official
- One year minimum on Intern Authorization

## PORTFOLIO-ORAL BOARD

- 670.00
- No Mentor Needed
- Competencies must be complete
- Combination of experience, PD, and Coursework
- Proof of four months full-time
- Could be completed in 60 days (application October-May only)

# QUESTIONS?

[Credentialing Knowledge Base/Help Desk](#)

[Key Words](#)

[Site- Overview and Timeline](#)

[Overview will have the documents needed for Site Based Plan](#)

[Competencies \(competency assessment sheets\)](#)

[Board = Demonstrated Competencies](#)

[BEL to EEL upgrade](#)