PTEX-CR

What it is, and Why it Matters….

Today's Learning Roadmap

- Before PTEX-CR
- Design of an exit exam
- Developers that know
- Validation
- Implementation
- Revalidation and application
- Making it Matter More

What it is…

- Process Technology –Chemical and Refining

- An Exit Exam that aligns with the Learning Objectives and Outcome of the NAPTA Process Technology Associate of Applied Science Degree Learning Objectives and Outcomes

- 154 Multiple Choice Items

What Came Before

GCPTA identified Eight Core Courses for the PTEC AAS degree:

- Introduction to Process Technology
- Process Equipment
- Process Systems
- Process Operations
- Process Troubleshooting
- Instrumentation
- Quality
- Safety, Health, and Environment

And then…

- GCPTA developed Learning Objectives for each Core Course
- GCPTA developed and published Instructor Manuals for all Eight Core Courses, as well as Oil & Gas
- GCPTA and College of the Mainland received Grants to develop additional Learning Resources
- The Center for the Advancement of Process Technology (CAPT) was created to develop these resources.

Designing an Exit Exam

On March, 30, 2005, the Center for the Advancement of Process Technology (CAPT), The College of the Mainland convened a group of subject matter experts (Table 1) to develop approximately 400 multiple choice test items aligned to the Chemical/Refining Process Technology Skill Standards.

Who Was There First

• Paros, Helene	BP CA
• Loney, Brent	Conoco Phillips OK
• Ayala, George	BP TX
• Crittenden, Sandra	BP IN
• Slawson, Fred	Conoco Phillips LA
• Staes, Mark	Lyondell-Citgo TX
• Tracy, Barbara	Conoco Phillips NJ
• Ethridge, Tracy	Dow TX
• Wruck, Bud	BASF TX
• Ellingson, Brian	FHR AK
• Treigle, Merv	College of the Mainland TX
• Prater, Jon U	niversity of Alaska-Fairbanks AK

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The Validation Process

During the summer, 2005, the 400 test items were divided into two pilot test versions. Form A contained 198 test items and was administered to content experts around the United States. Test answer sheets were then scanned using NOCTI's scanning capability and preliminary test results were provided electronically to Dr. Manley who created the data used for the Validation and Cut Score Determination sessions.

Process Categories

- Control Separation Systems
- Control Heat Exchange Systems
- Control Reaction Systems
- Control Generation Systems
- Control Waste Treatment/Destruction Systems
- Control Utility Systems
- Control Chemical Material Handling and Storage
- Troubleshoot Process Abnormalities/Equipment Malfunctions
- Maintain Safe and Healthy Work Environment

The Final Product

The subject matter experts agreed that the two final forms of the test must contain 100 items that have:

- equal/comparable item level difficulty,
- equal/comparable item discrimination,
- comparable number of items based on Bloom's Taxonomy
- have the same passing score.

Item difficulty is an indication of how difficult the item is.

Item discrimination indicates how well the item discriminated between those who did well on the test and those who did not.

What happened next?

- Educational Institutions used PTEX-CR in limited applications.
- Industry used PTEX-CR primarily as a post-hire pre-assessment tool to determine new-hire cognitive skills and customize Basic Operator Training development and delivery.

Then things changed…

- In 2014 NAPTA became the intellectual property owner of all resources developed under the CAPT/NSF grant.
- NAPTA partnered with Pearson Education, the textbook copyright owner, to revise all six PTEC titles and author those missing.
- In 2017 NAPTA Board of Directors approved the revalidation of PTEX-CR to align with the NAPTA Learning Objectives and Outcomes.

But why PTEX-CR now?

- NAPTA exists to provide “standards” for Process Technology education through the PTEC AAS degree and its “Eight Core Courses”
- PTEX-CR will ensure (as it was designed to do) that ALL “endorsed” schools are meeting the requirements by **effectively** teaching to NAPTA’s Learning Objectives
- Perkins is now expecting all programs that receive funds to provide an exit criteria

PTEX-CR Revalidation

- Late in 2017 NAPTA and NOCTI partnered to revalidate the PTEX-CR exam
- In early 2018 NAPTA formed a team of SMEs to conduct the revalidation.
- AFTER revalidation Team NAPTA cross-walked ALL items to the NAPTA Learning Objectives
- Upon completion NOCTI provided NAPTA with the updated and revalidated exam and blueprint.

Team NAPTA at work

Revalidation Criticality Rating Criteria

- Incorrect performance of this task may cause major disruption to the operation and/or require extensive or costly corrective action
- Incorrect performance of this task may cause major delay to a group or major damage
- **I**ncorrect performance of this task may cause minor equipment damage or minor delay to operations
- Incorrect performance of this task may cause minor problems, exceed safe operating procedures or may require some corrective action that can be scheduled later
- Incorrect performance of the task will not affect operations or service

Revalidation Difficulty Rating Criteria

- Greater than two weeks of training and experience. Requires mastery of difficult psychomotor skills and higher levels of reasoning ability in addition to extensive practice.
- One week to two weeks of training and experience. Requires mastery of difficult psychomotor skills and higher levels of reasoning ability (problem solving, comprehension, memory).
- One day to one week of training and practice. The task requires mastery of knowledge of topic, some problem-solving skills, and a number of psychomotor skills.
- A few hours to one day of training and practice. The task can be mastered with minimal OJT (On-the-job training).
- No training. Requires knowledge and skills most people have.

Revalidation Frequency Rating Criteria

- Greater than three times per shift
- One to three times per shift
- One to three times per week
- One to three times per month
- One to three times per year

CHEMICAL/REFINING PROCESS TECHNICIAN

Test Code: 8217

Version: 01

Written Assessment:

- Administration Time: 3 hours
- Number of Questions: 154

Areas Covered:

- 20% Control Separation Systems
- 15% Control Heat Exchange Systems
- 10% Control Reaction Systems
- 6% Control Generation Systems
- 5% Control Waste Treatment/Destruction Systems
- 12% Control Utility Systems
- 6% Control Chemical Materials Handling and Storage
- 12% Troubleshoot Process Abnormal/Equipment Malfunctions
- 14% Maintain Safe and Healthful Work Environment

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So, what next?

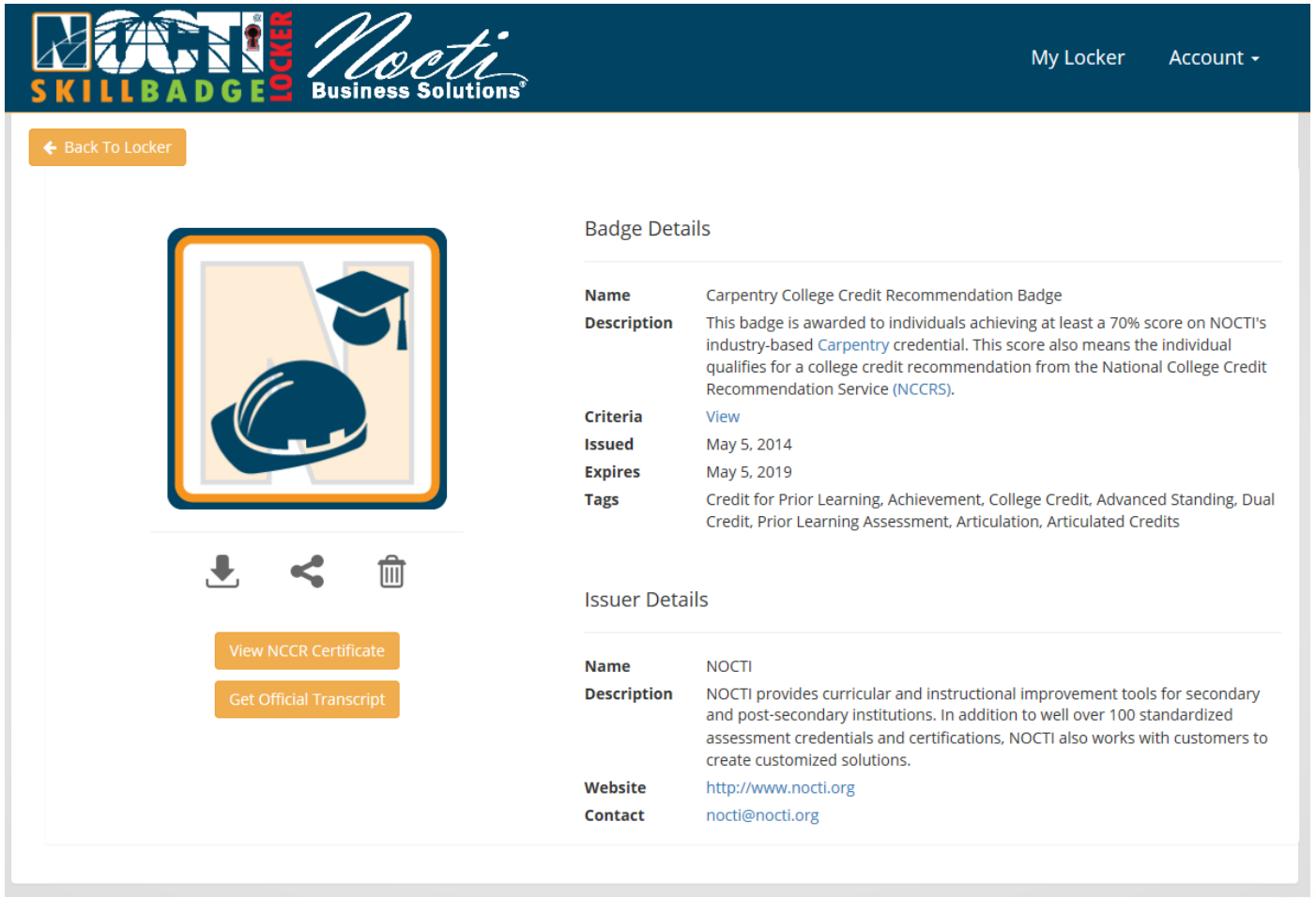
- Revalidated Exam to be part of NAPTA endorsement
- Ad Hoc committee assembled to determine how and when phases of rollout will occur
- ALL “endorsed” schools will maintain NAPTA standards regarding PTEX-CR pass rates.
- PTEX-CR will NOT be a requirement for membership

Adding Value for the Graduate

To enhance the value of PTEX-CR for the graduate AND the hiring manager NAPTA is providing a Skills Badge and Credentialing Certificate to all who pass the exam.

These resources can be included in applications, resume's , and online profiles to inform the hiring manager of the candidates qualifications

Sample Skills Badge



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Sample Credentialing Certificate

Summary

- Before PTEX-CR
- Design of an exit exam
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- Making it Matter More

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Thanks for your participation!

QUESTIONS?

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Thank you!

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Eric Newby director@naptaonline.org