

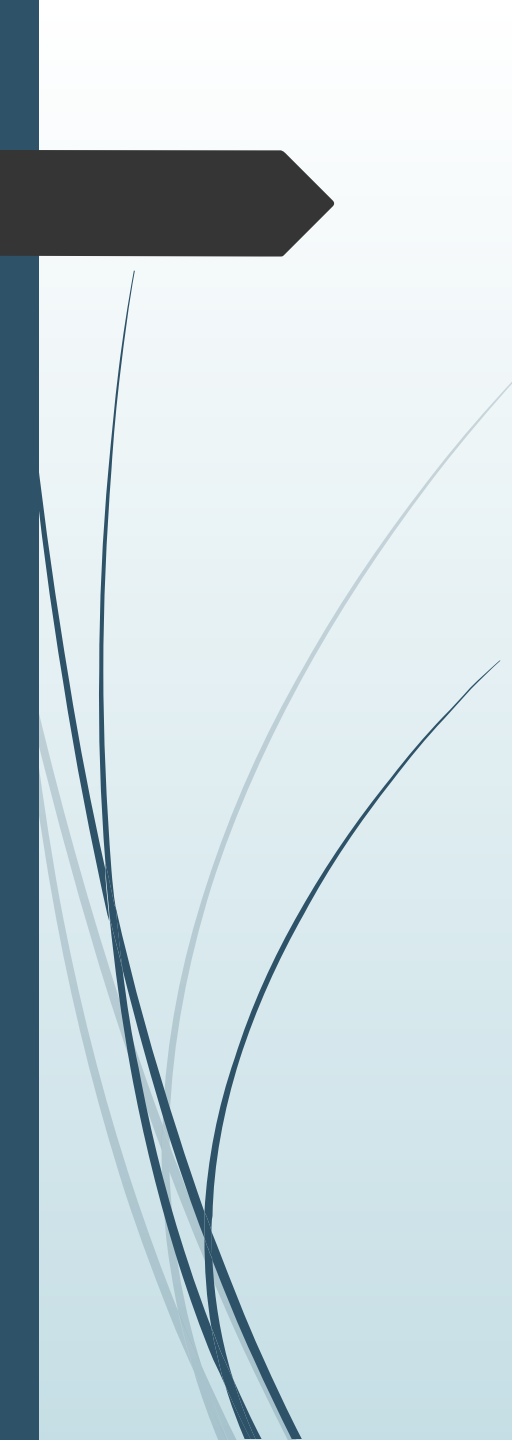


# CS1632: Software Quality Assurance Spring 2017

Bill Laboon

5505 Sennott Square

T/H 12:30 - 2:15



# What is Software Quality Assurance?

## Let's start with what it's not...

- It's not just testing
- It's not finding every bug
- It's not something you do after you created something
- It's not a “lesser” version of software development
- It's not optional
- It's not something you've never done



## Well, then, what is it?

- It is how we ensure quality during software development.
- It is involved in the entire software development lifecycle: developing requirements, designing the software, writing code, integrating and testing it, etc.
- It is providing an independent view of the software product.
- It is identifying weaknesses and problems in the software product, and creating processes which help correct those weaknesses and problems.



# Quality Assurance (QA) vs Quality Control (QC)

- Technically, QA is the process of ensuring quality. QC is the implementation of those activities for specific products.
- QA focuses on the process; QC is using that process to identify defects in specific software projects
- QA focuses on prevention of defects; QC focuses on detecting those defects
- QC is a part of QA!
- This course focuses on QC, but we need to understand the QA processes in order to implement them
- In industry, the term QA tends to be used for everything, including QC



## QA/QC includes....

Unit testing, automated testing, acceptance testing, requirements analysis, equivalence classes, white/grey/black box testing, verification, validation, combinatorial testing, performance testing, usability testing, formal analysis, static analysis, linting, traceability matrices, defect reporting, test planning, TDD, fuzz testing, KPIs, software profiling, resource analysis, usability analysis, regression testing, smoke testing, security analysis, penetration testing....

**It's an entire field of study!**



# Who Am I?

- Bill Laboon (note: no doctorate, thus not Dr.)
- BS in Computer Science and Political Science, Related Area: Mathematics
  - Pitt
- MS in Information Technology, Software Design and Management
  - Carnegie Mellon
- Industry Experience
  - I've been a software engineer, field engineer, technical lead, manager, test engineer, and testing manager
  - I've been paid to program in C, C++, Visual Basic, PHP, perl, Ruby, Java, Haskell, JavaScript, CoffeeScript, and probably a few I'm forgetting



# Let's review the syllabus and course information...

- Available at...
- [https://www.github.com/laboon/CS1632\\_Summer2017](https://www.github.com/laboon/CS1632_Summer2017)
- All code will be submitted via GitHub (or GitLab, if you prefer).