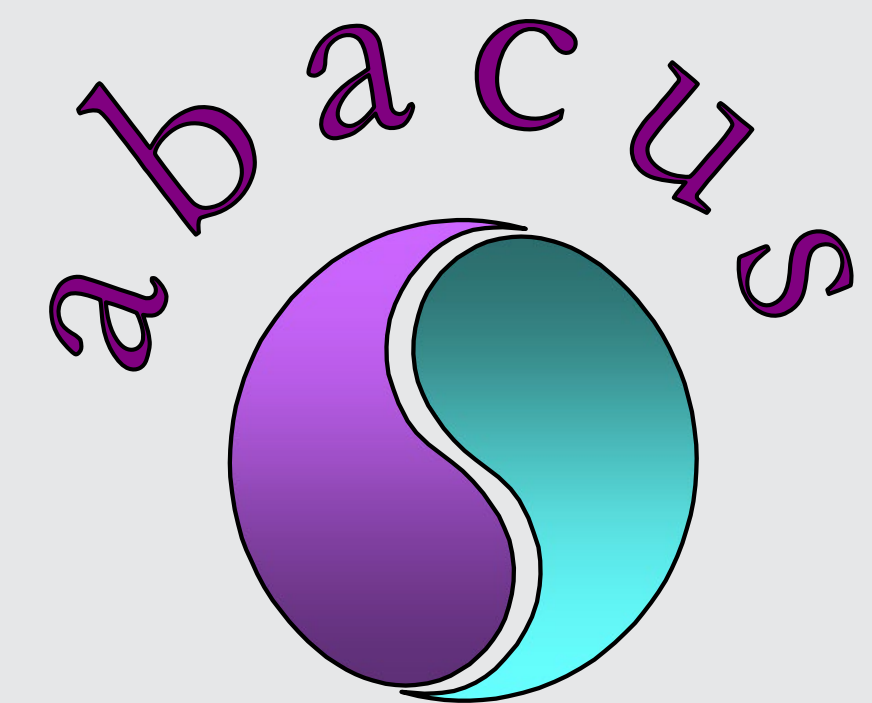


# Online *Lean Six Sigma* Black Belt Training

- Alex Boussetta, Master Black Belt
- Sheri Phillips, Master Black Belt



# Summary

Survey  
Black Belts vs Green Belts  
Overall content  
Certification process  
Project selection  
Pre requisites  
Setup needed

The project is connected to a recognized need, impacts and adds value to your organization (quality, time, cost)

No minimum dollar value, still SMART

The project has a measurable benefit that can be confirmed and is correlated to a product or process performance characteristic that is measurable in a valid and reasonable way.



# *Agenda*

- Survey
- Black Belts vs Green Belts
- Overall content
- Certification process
- Project selection
- Pre-requisites
- Setup needed



# Survey results



# *What is a Black Belt*

A Lean Six Sigma Black Belt is a trained improvement agent who demonstrates change management skills, project management skills, team leadership, and understands team dynamics.

Black Belts aim for *breakthrough improvements* .



# *What is a Black Belt*

- Lead *complex* and *multifunctional* process improvement or process design projects.
- Manage projects using a roadmap that encompasses change management.
- Identify and optimize the key factors that are linked to the customers needs in a process or product.
- Analyze data and information in order to *demonstrate* and *prove* the way forward.
- Achieve successful breakthroughs in *environments where resistance is a challenge*.



# *Typical role of a Black Belt*

- Lead, as a team leader, complex cross functional projects.
- Provide technical support and mentoring to Black Belts and Green Belts, including on the most recent tools.
- Act as an internal consultant and a Lean Six Sigma expert.
- Participate to the governance.
- Establish procedures, best practices.



# *Overall content*

- Change management tools
- Team decision making tools
- Analysis tools
- Statistical tools
- Project management
- Artificial Intelligence tools





# *Module I - Recognize*

1. Selecting the right projects to improve
2. Strategic planning / Hoshin Kanri
3. Multi generation project plans



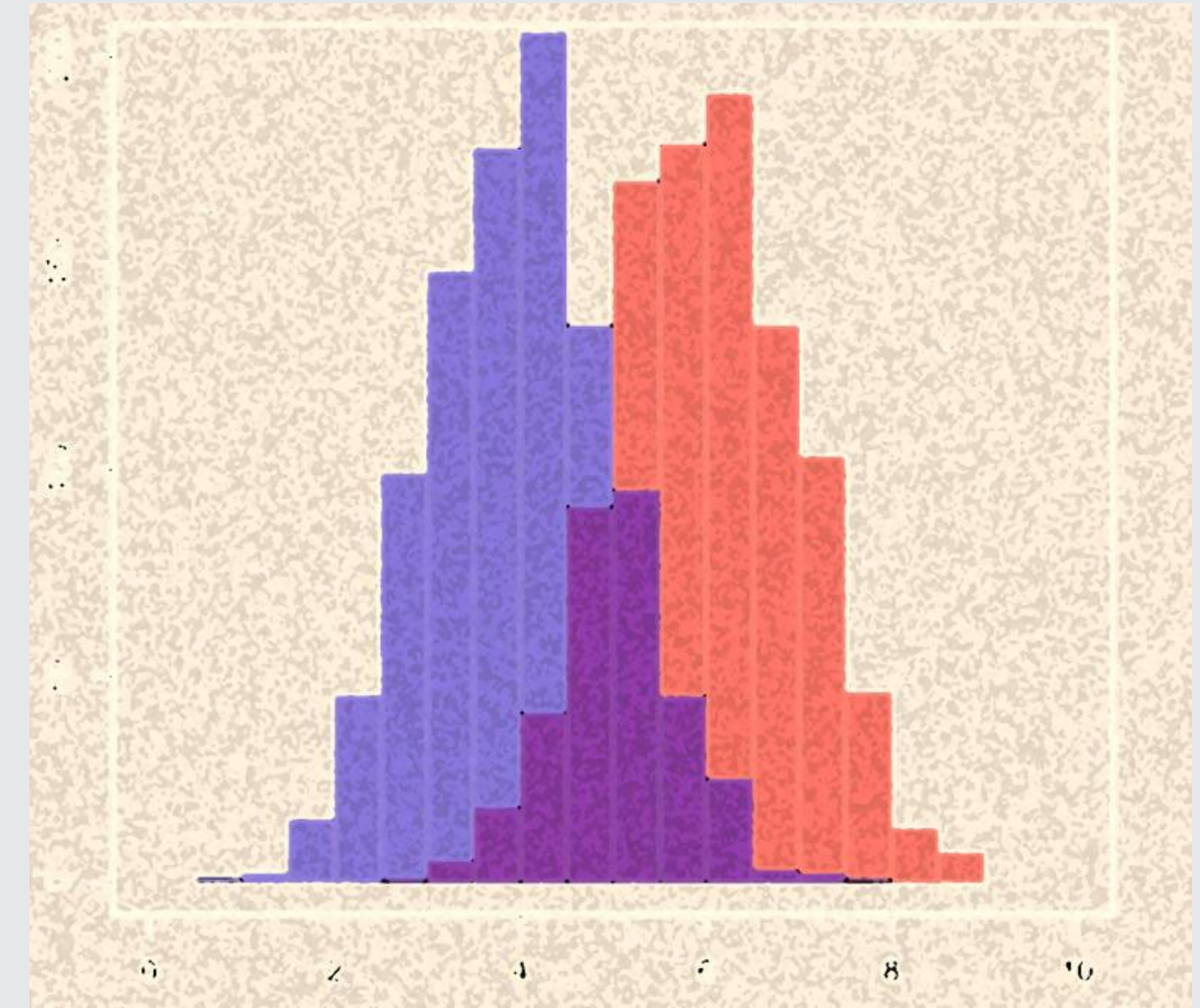
# *Module I - Define*

1. Defining the project
2. Teamwork and team building
3. Overview of process management
4. Project management tools and principles
5. Change management tools
6. Leadership styles
7. Artificial Intelligence / Machine Learning:  
applications and overall process



# *Module II - Measure*

1. Voice of the customer and survey techniques
2. Mapping the process
3. Value Stream Mapping
4. Measurement system analysis (Gauge R&R, continuous, attribute)
5. Advanced Process capability for normal and non normal data
6. Coaching, giving feedback



# *Module III - Analyze phase*

1. Sample size calculation
2. Hypothesis testing, ANOVA
3. Correlation and regression
4. Selection of the factors to improve
5. AI/ML
  1. Supervised (KNN, LR)
  2. And unsupervised (K Means, PCA)  
learning



# *Module IV - Improve phase*

1. Workshops guidelines and facilitation
2. Process design methodology including the Pugh matrix
3. Scenario evaluations and selection, creativity
4. Design of experiment (full, fractional)
5. Pull: Kanban, heijunka
6. Pilot and implementation plan
7. Change management
8. ML/AI
  1. Neural networks and deep learning notions
  2. Reinforcement learning

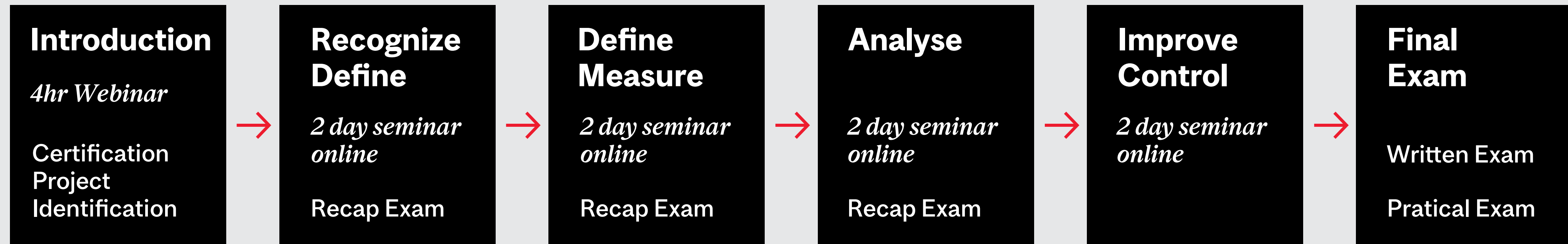


# *Module IV - Control phase*

1. Setting a control plan (recap)
2. Evaluation of the gains
3. Control charts, SPC (recap only)
4. Exam I and II



# Certification & training



Coaching and work on the project



# *Black Belt Certification Requirements*

## Accomplishments

- Complete 1 project from Definition to implementation, including controls
- Pass interim exams
- Pass final exam

**Once a Belt, Always a Belt**





# *Black Belt Certification Requirements*

## Support

- Online and over the phone coaching
- Ad hoc meetings when possible



# *Expectations during the sessions*

- Be open to try things out
- Share your experiences
- Build trust and a network
- Ask questions
- What happens in the BB training, stays in the BB training



# *Certification Project Selection Criteria*

The project needs to deal with a problem that is SMART

- Specific: *One problem*
- Measurable: *If you can't measure it, you don't know if you improved*
- Achievable: *Contained enough to be able to make a difference*
- Relevant: *Still having a impact on the institution's operations*
- Time constrained: *Your project needs to have an end date*



# *Project Selection Criteria*

- The project is connected to a recognized need, impacts and adds value to your organization (quality, time, cost).
- No minimum dollar value, still SMART
- The project has a measurable benefit that can be confirmed and is correlated to a product or process performance characteristic that is measurable in a valid and reasonable way.



# *Project Selection Criteria*

- The project is based on a process that does not depend on major influences outside of your control.
- The project has a sponsor who is willing to support the project.



# *Examples*

- **Projects lead time reduction**
- **Product or service lead time reduction**
- **Inventory turns improvement**
- **Bid process**
- **Yield improvement**
- **Top 1 or top 2 customer complaints reduction**
- **Improve change management in products or services**
- **Cost estimating process**



# *Examples*

- Reduction of blood stream infections in ICU
- Reduction in patient information errors
- Emergency Department Patient Wait Time
- Day surgery lead time reduction
- Redesigning a wing for efficiency and quicker communication
- Improved Patient Throughput in Radiology
- Unique treatments dosage preparation and control



# *Pre-Requisites*

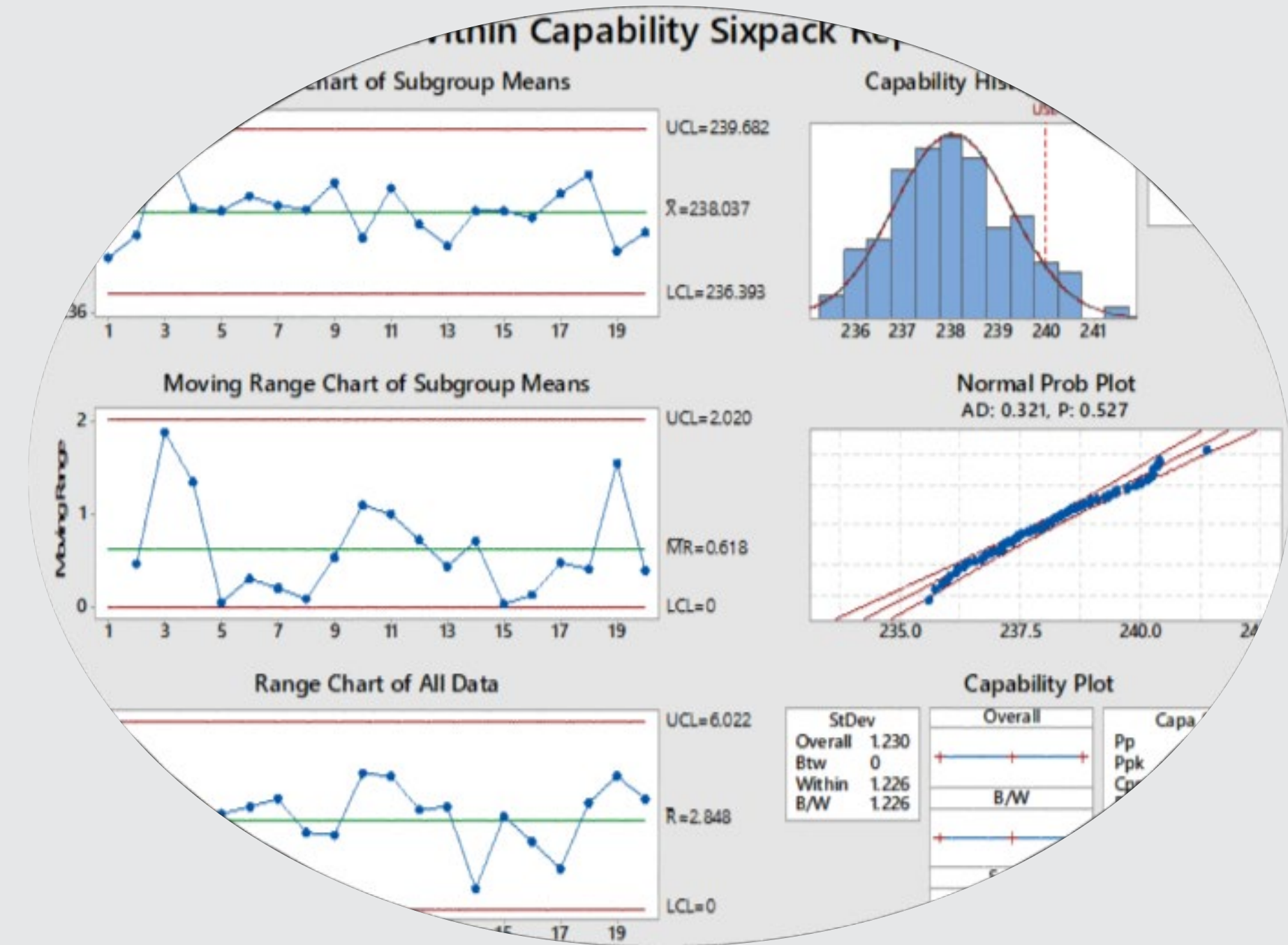
- 2 years of work experience (in any field)
- Lean Six Sigma Green Belt Certification or the equivalent
- Exceptions can be discussed, for example
  - *Equivalent experience and exposure*
  - *Additional training pre-Black Belt*





# Setup Needed

- Registration and payment
- Internet connection, webcam
- Laptop with Microsoft Windows
- Material and Excel
- Templates supplied
- Minitab supplied
- Excel



# *Next steps*

- **Project**  
Start identifying with your managers / directors / coach what will be your certification project
- **Get Minitab license**  
Needed for the 2<sup>nd</sup> session and 3<sup>rd</sup> sessions  
(Measure, Analyze, Improve, Control)
- **Installing Python and related libraries**  
Separate instructions will be sent



*Q&A*

Q & A

