EMBRY-RIDDLE
Aeronautical University
SCHOLARLY COMMONS

Presentations

RED Innovation: Using Scrum to Develop an Agile Department

8-2023

2023 RED Advisory Board Meeting Department Scrum Projects

Massood Towhidnejad
towhid@erau.edu

Omar Ochoa
ochoao@erau.edu

James Pembridge
pembridj@erau.edu

Radu Babiceanu
babicear@erau.edu

Follow this and additional works at: https://commons.erau.edu/red-presentations

Scholarly Commons Citation

Towhidnejad, M., Ochoa, O., Pembridge, J., & Babiceanu, R. (2023). 2023 RED Advisory Board Meeting Department Scrum Projects. , (). Retrieved from https://commons.erau.edu/red-presentations/2

This Presentation is brought to you for free and open access by the RED Innovation: Using Scrum to Develop an Agile Department at Scholarly Commons. It has been accepted for inclusion in Presentations by an authorized administrator of Scholarly Commons. For more information, please contact commons@erau.edu.

ERAU NSF RED
Advisory Board Meeting

Department Scrum Projects and Lessons Learned

August 2, 2023

Fall and Spring Scrum Projects

Project	Product Owner	Scrum Master	Development Team	Customer/Stakeholder
Reward and Incentive	Babiceanu	Ochoa	Kandel, Yoshigoe, Pang	EECS faculty
Fostering Community	Butka	Akbas	Liu, Rojas, Bosma*, Hernandez*, Gracia Otalvaro*, Shivakumar*, Hagerty-Posell*	EECS Students
Mentorship Enabling Student Success	Garfield	Stansbury	Behi, Bethelmy, Watson, Demirkiran, CTLE Rep.	EECS Faculty and Students
Scrum Master	PI Team	Towhidnejad	Stansbury, Akbas, Ochoa	PI Team

* Indicate Student Team members

Rewards and Incentives Team (RIT)

- Stakeholders: EECS Faculty, EECS Department, EECS Students, College, University
- Goals:
  - Explore potential rewards and incentives to support the integration of Scrum within the EECS department.
  - Develop policies and procedures to reward and incentivize EECS faculty in using Scrum for EECS service.
- Scrum Framework
  - 2 week sprints
  - Two daily standups (Monday and Wednesday)

RIT Deliverables (6 Sprints)

- Preliminary procedures for establishing student-support as a reward for Scrum participation
- Defined policies for an internal competitive award for best Scrum (teamwise) implementation within the department
- Drafted procedures and documentation to support individual Scrum contributions for Promotion and Tenure
- Identification and initial creation of media (social and physical) recognizing Scrum contributions within the department
- Currently preparing presentation on all these deliverables to elicit feedback from all the faculty within the department.

Foster Community Committee

- Stakeholders: EECS Students, EECS Department
- Goals:
  - Improve the faculty/student relationship in-and-out of class
  - Improve the student/student relationship in-and-out of class
  - Incorporate student involvement
- Semester Goals:
  - Allocate a permanent location for students to study and socialize
  - Organize events that will bring EECS students together and inform them about the “Foster Community” initiative
- Scrum Framework
  - Three faculty members, Five students
  - Two-week sprints
    - End-of-Sprint business and next sprint planning every other week
    - Scrum master translates tentative plan and project backlog into sprint backlog

Deliverables (4 Sprints)

- Allocated a room for the department students
  - Selected and hired student leaders for the allocated space
  - Created flyers to announce the room availability
- Organized three events
  - First event introduced the Allocated Space and Foster Community Group
  - Second and third event introduced the TAs and provided more information
- Created communication channels for EECS students based on feedback from students
  - Discord servers, MS Teams, group e-mails
- Goals for end of year (by 15 May 2022),
  - Evaluate achievements and produce a to-do list for next semester based on the experience and student feedback

Mentorship Enabling Student Success (MESS)

- Stakeholders: EECS Students, EECS Department, College of Engineering, University
- Goals:
  - Determine what factors contribute student thriving.
  - Poll students to determine where they felt they needed most help.
  - Formulate a pilot program for AY2023-2024 to enable student thriving through mentorship activities.
- Scrum Framework
  - 1-2 week sprints
  - Standup Meetings: Mondays via MS Teams chat; Wednesdays face-to-face
  - Utilized Scrumwise for backlog, scrumboard, and burn-down charts.

MESS Deliverables (8 Sprints)

- Proposal for a AY2023-2024 Pilot Program
  - Leverage mentorship to address student competencies in time management, leadership, teamwork, communication, and self-awareness.
  - Three activities:
    - Peer Mentoring: Team Pairing (EGR 101/Capstone)
      - Two visits from Capstone students to EGR 101 team meeting, and vice-versa.
      - Worksheet to frame the experience and highlight key points.
    - Peer Mentoring: Time Management
      - Training via information session
      - Student mentors dedicated to aiding students with time management problems
    - Fostering Student Self-Awareness
      - Add “assignment wrappers” that prompt students to reflect upon the course’s outcomes, topics, and techniques covered and self-assess their understanding/competency with each.

Scrum Masters Committee (SMC)

- Stakeholders: RED PI Team
- Goals:
  - Synchronize the department teams' goals with the needs of the project goal
  - Provide an environment for sharing the teams progress
  - Identification of the opportunities and challenges across team
- Scrum Framework
  - Four Faculty members
  - Meeting once every two weeks
  - Intermediate update between meetings as needed
  - Scrum Master Report to the RED PI team

Lessons Learned & Observations - 1

- Perfect Scrum implementation is not possible in an academic setting
  - Faculty schedules are dynamic
  - Online tools and communication are helpful
- “Scrum-lite” implementation is very well a possibility

Lessons Learned & Observations - 2

- There is a need for Chief Scrum Master and Chief Product Owner
- Product owner can make or break the team
  - Customers' vision (RED SCRUM team) must be very clear so faculty teams POs can align the project's objectives by providing comprehensive instructions to the developer's team
  - Scrum Improvement at the department
    - Well-defined product and its scope
    - POs who agrees with the product and scope
    - Award and incentives plan could expedite transition from traditional process to agile environment
- Well trained scrum masters is a MUST for successful implementation of the Scrum project
- When team members are masters of their craft, daily standups takes less than 10 minutes

Lessons Learned & Observations - 3

- Student inclusion has a positive impact, especially in a group focusing on student community
  - Received valuable feedback on organization
  - Received valuable input on communication channels, events, needs.
- Estimating the capacity of a Sprint in academia is very, very, very hard.
  - Due to our prioritization of work, it's very difficult to establish the available time the "developer" can offer to the Sprint
  - The basis of SCRUM is to assign 100% of developers' effort allocation to the Sprint. This is not practical in the academic environment. Therefore, the calculation of the capacity is impacted
  - Something that might take a couple of hours can become a burden if many other responsibilities are priority; whereas something perceived as more time consuming can be done faster if there's bandwidth

Lessons Learned & Observations - 4

- Positive implementation of the Stand-up meetings concept adapted to Academia:
  - Twice a week
  - Face to face meeting once a week
  - Extended Stand-up face-to-face meeting
    - Stand up meeting for project status
    - Working meeting for addressing Sprint Backlog and structural items, impediments (supplementing one on one meetings)
- Timebox evaluation
  - End of the semester obligations impact the team's velocity
  - Summer schedule in academia causes disruption on the implementation process (continuity)
- Better management of project's information radiators
  - Utilize additional academia-customized metrics?***

Lessons Learned & Observations - 5

- Internal and external dissemination could assist in the implementation process
  - Internal dissemination techniques
    - Display Monitors showing SCRUM information
    - Display walls showing research information and opportunities
    - Display walls showing awards & accomplishments
    - Fixed SCRUM venue/location for meetings and working sessions (sense of belonging)
  - External methods
    - News etter
    - Email
    - Master in CS with track in cyber and SE track
    - Social media
    - Webpage