

**Liberty University
School of Aeronautics**

Unmanned Aerial Systems

Professor Jonathan Washburn

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Introduction

- **Professor Jonathan Washburn**

- **RQ-23A Tigershark UAS**

- Block 3, 3A.1, and 3A.2
 - Deployed to Iraq and Afghanistan
 - Over 800 hours logged as PIC with zero losses

- **Research and Development**

- **Masters in Aeronautical Science**

- UAS and Space Operations
 - “Integration of UAS on the Manned Mars Missions”

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Degree Program

- UAS Degree Program
 - BS Aeronautics: UAS Cognate
 - Operator/Pilot Program
- Degree Structure
 - Fundamentals of UAS operations
 - Small UAS Certification
 - Multirotor UAS
 - Medium UAS Certification
 - Fixed wing UAS
- 52 students currently enrolled in the UAS program

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Course Overviews

- AVIA 230 – Introduction to UAS
- AVIA 235 – Small UAS Ground
 - Multirotor and Fixed wing
 - 10 Simulators
- AVIA 236 – Small UAS Flight
 - Multirotor flight training and certification
(Coming Soon)

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Course Overviews

- AVIA 323 – UAS Avionics and Powerplants
 - Advanced GPS
 - Electronic Communication
 - Computer Networks
 - RF Theory
 - Powerplants
 - Sub-Systems

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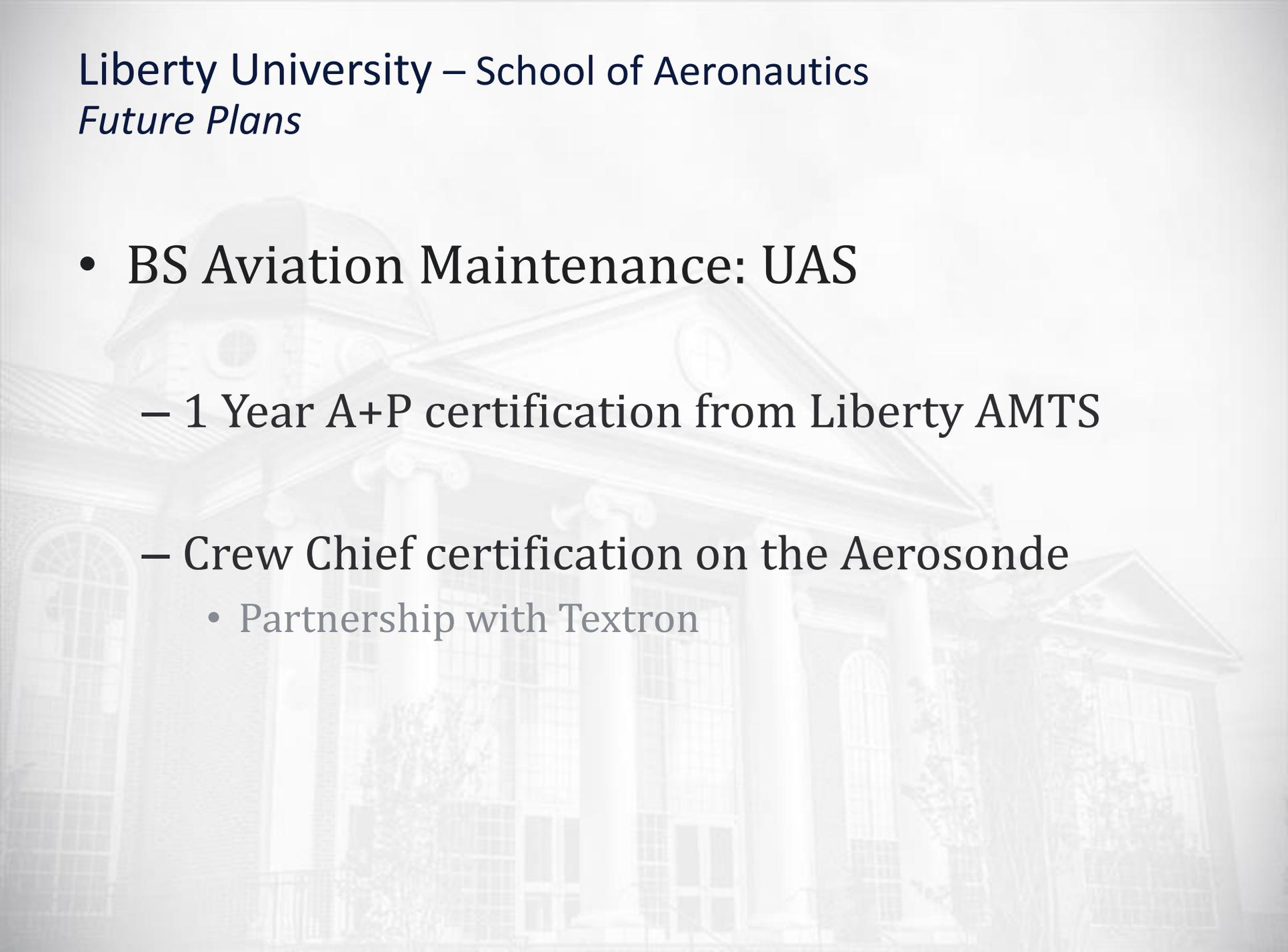
Course Overviews

- AVIA 335, 446, and 447
 - Aerosonde Operator Training
 - Textron partnership allowing LU students full flight training and certification on the Aerosonde platform
 - Industry leading, medium size, fixed wing UAS certification
 - Students will accomplish this training the summer of their Junior year
 - If hired, the entire senior year can be done online

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Future Plans

- **Small UAS Certificate Course**
 - Non-LU Students
 - Online Ground School portion
 - On Location Flight Intensive
 - Lab Fee
- **Other UAS Certificates**
 - UAS Avionics and Powerplants (AVIA 323)



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Future Plans

- BS Aviation Maintenance: UAS
 - 1 Year A+P certification from Liberty AMTS
 - Crew Chief certification on the Aerosonde
 - Partnership with Textron

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Quality Operators

- In the past, many UAS pilots failed to apply manned aviation principles to UAS
 - Lack of self preservation
 - Repetition
 - Fatigue
 - Training
 - SOP Review
- Liberty University's UAS program looks to combine the well vetted manned aviation principles into the UAS operator mindset.
 - Professional UAS Operators for any size UAS

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- Liberty University
 - Training quality operators for UAS operations
 - Collaborating with local community colleges through certificate programs and courses
 - Working with the Western Virginia AUVSI chapter to promote UAS training
 - Starting research on the integration of UAS into various applications and the NAS