# ADVANCED MICROELECTRONICS FABRICATION GRADUATE ACADEMIC CERTIFICATE

All required coursework must be completed with a grade of B or better (O-10-b (https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/)).

| Code | Title | Hours |
| --- | --- | --- |
| ECE 565 | Introduction to Microelectronics Fabrication | 3 |
| Select one of the following: | | 3 |
| ECE 562 | Quantum Mechanics for Electrical Engineers | |
| PHYS 564 | Solid State Physics | |
| Select two from the following: [1] | | 6-7 |
| CHE 455 | Surfaces and Colloids | |
| CHEM 558 | Electrochemistry | |
| ECE 518 | Introduction to Electronic Packaging | |
| ECE 562 | Quantum Mechanics for Electrical Engineers | |
| GEOL 549 | Principles of Electron Microscopy | |
| MSE 423 | Corrosion | |
| MSE 432 | Fundamentals of Thin Film Fabrication | |
| ME 558 | Finite Element Applications | |
| PHYS 411 | Advanced Physics Lab | |
| PHYS 543 | Optics | |
| PHYS 564 | Solid State Physics | |
| STAT 419 | Introduction to SAS/R Programming | |
| STAT 426 | SAS Programming | |
| STAT 427 | R Programming | |
| STAT 431 | Statistical Analysis | |
| **Total Hours** | | **12-13** |

[1]

Courses chosen must be different from the core courses. At least one course must be 500-level.

**Courses to total 12 credits for this certificate**

1. An ability to identify, formulate, and solve advanced microelectronics fabrication problems by applying principles of engineering, science, and mathematics.
2. An ability to communicate effectively on topics related to advanced microelectronics fabrication concepts and technologies with a range of audience.
3. An ability to develop and conduct appropriate advanced microelectronic fabrication experimentation, analyze and interpret data, and use engineering judgment to draw conclusions about microelectronics fabrication.

Overall, these learning outcomes demonstrate that students who have completed a certificate in advanced microelectronics fabrication have acquired the knowledge, skills, and abilities necessary to succeed in various fields of the advanced microelectronics fabrication industry. The students are well-prepared to pursue further education or employment in the advanced microelectronics fabrication field.