

Master of Science in Cybersecurity Student Handbook



BOISE STATE UNIVERSITY

2021-2022

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Welcome and Introduction

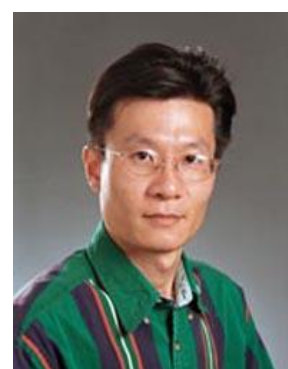
Welcome and thank you for choosing Boise State for your graduate cybersecurity degree. We prepared this Handbook as part of our commitment to help you succeed in our programs. This Handbook consolidates some key information that you need to successfully navigate and complete your graduate program. We hope you find this information useful. If you have any questions at any time, please do not hesitate to contact us. We are here to make your graduate experience rewarding and help you meet your goals. Best wishes for your graduate studies and your career beyond!



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SECTION I: PROGRAM OVERVIEW AND DESCRIPTION

OVERVIEW

The mission of the program is to engage students in academically rigorous training on the security aspects of software, signal analysis and protocol analysis, and management. It is designed for post-baccalaureate students who want to effect positive change by developing and deploying solutions that mitigate cybersecurity threats. The program is offered in three emphases: Computer Science, Cryptanalysis and Signals Analysis, and Management. The program provides a foundational and integrated approach to cybersecurity education developed to deliver specific, relevant, in-demand knowledge and skill sets. The program's curriculum is intensive and has an in-depth focus on the most critical current and emerging threats.

EMPHASIS AREAS

Students in the MS program can study in one of three concentration areas: Computer Science, Cryptanalysis and Signals Analysis, and Management.

Computer Science

The Computer Science emphasis focuses on the protection of computer systems, networks, programs, critical infrastructures, and data from unintended or unauthorized access, change, or destruction.

Cryptanalysis and Signals Analysis

The Cryptanalysis and Signals Analysis emphasis focuses on modern and emerging cryptographic systems, weaknesses of the underlying mathematics of a cryptographic system, weaknesses in implementation including side-channel attacks, and weak entropy inputs.

Management

The Management emphasis focuses on managing the many complex systems required to run a successful information security program. These systems include governance systems, change management systems, identity, and access management systems, and managing the people running them.

Accelerated Masters

The Accelerated Master of Science in Cybersecurity is an exciting opportunity for selected Boise State University undergraduate students. This program allows current Boise State undergrads to select two graduate courses that can be taken during their undergraduate career and applied to both their Bachelor's degree and Master of Science in Cybersecurity degree requirements. Students accepted into the accelerated masters degree track can complete their MS in as little as one year. This accelerated track is available to students regardless of which emphasis is selected.

SECTION II: PROGRAM COURSEWORK AND COURSE DESCRIPTIONS

COMPUTER SCIENCE EMPHASIS DEGREE REQUIREMENTS

Cybersecurity Foundation (9 credits)

CYBER 500 Introduction to Cybersecurity (3 credits)

CS 507 Computing Foundations For Computational Science¹ (3 credits)

CS 508 Network and System Foundations for Cybersecurity¹ (3 credits)

Cybersecurity Knowledge Building – at least 4 of the following (12 credits):

CS 524 Cybersecurity of Critical Infrastructures (3 credits)

CS 546 Computer Security (3 credits)

CS 567 Applied Cryptography (3 credits)

CS 575 Software Security (3 credits)

CS 622 Advanced Network Security (3 credits)

Note: new courses will be added to this Cybersecurity Knowledge Building in near future

Cybersecurity Interdisciplinary Knowledge Building – at least two of the following or other classes approved by the program (6 credits):

CS 552 Operating Systems (3 credits)

CS 554 Advanced Operating Systems (3 credits)

CS 621 Digital Forensics (3 credits)

CS 523 Cyber-Physical Systems (3 credits)

ITM 556 Information Security Management (3 credits)

ITM 557 Security Analytics (3 credits)

MATH 508 Advanced Asymmetric Cryptography and Cryptanalysis (3 credits)

MATH 509 Symmetric Key Cryptography and Cryptanalysis (3 credits)

Or other courses approved by the program

Cybersecurity Culminating Experience (3 credits):

CYBER 692 Capstone Course (3 credits) OR CYBER 590 Practicum/Internship (3 credits)

¹ CS 507 and CS 508 are bridge courses and are intended for students who don't have a sufficient background in these areas. Academic adjustment can be made if the student has sufficient background (academic or practical).

Total Credits: 30

CRYPTANALYSIS AND SIGNALS ANALYSIS EMPHASIS DEGREE REQUIREMENTS

Cybersecurity Foundation (9 credits)

CYBER 500 Introduction to Cybersecurity (3 credits)

MATH 504 Number Theory ²(3 credits)

MATH 572 Computational Statistics (3 credits)

Cybersecurity Knowledge Building – at least 4 of the following (12 credits)

MATH 508 Advanced Asymmetric Cryptography and Cryptanalysis (3 credits)

MATH 509 Symmetric Key Cryptography and Cryptanalysis (3 credits)

MATH 510 Quantum and Post-Quantum Cryptography (3 credits)

MATH/CS 667 Advanced Applied Cryptography (3 credits)

ECE 650 Stochastic Signals and Systems (3 credits)

Cybersecurity Interdisciplinary Knowledge Building – At least two of the following or other classes approved by the program (6 credits)

CS 534 Machine Learning (3 credits)

CS 561 Theory of Computation (3 credits)

CS 523 Cyber-Physical Systems (3 credits)

ECE 650 Stochastic Signals and Systems (3 credits)

ECE 651 Information and Coding Theory (3 credits)

ITM 556 information Security Management (3 credits)

MATH 506 Advanced Algebra (3 credits)

MATH 562 Probability and Statistics (3 credits)

MATH/CS 667 Advances in Applied Cryptography (3 credits)

Or other courses approved by the program

² MATH 504 and MATH 572 are bridge courses and are intended for students who don't have a sufficient background in these areas. Academic adjustment can be made if the student has sufficient background (academic or practical).

Cybersecurity Culminating Experience (3 credits)

CYBER 692 Capstone Course (3 credits) OR CYBER 590 Practicum/Internship (3 credits)

Total Credits: 30

MANAGEMENT EMPHASIS DEGREE REQUIREMENTS**Cybersecurity Foundation (10 credits)**

CYBER 500 Introduction to Cybersecurity (3 credits) OR ITM 555 Information Security (3 credits)

ITM 556 Information security management (3 credits)

ITM 557 Security Analytics (3 credits)

BUSMBA 500 Introduction and Business Foundations (1 credit)

Cybersecurity Knowledge Building (9 to 12 credits)

MBA 514 Innovation Driven Advantage (3 credits) OR MBA 531 Strategic Perspectives (3 credits) OR BUSMBA 501 Design Thinking and Strategic Management (4 credits)

MBA 503 Managing Successful Projects (3 credits) OR MBA 549 – Successful Project Management (3 credits) OR BUSMBA 540 – Managing Successful Projects (4 credits)

MBA 522 Leading People and Organizations (3 credits) OR MBA 532 Organizational Issues and Leadership (3 credits) OR BUSMBA 510 People and Organizations (4 credits)

Cybersecurity Interdisciplinary Knowledge Building - At least three of the following or other classes approved by the program (9 credits)

CS 524 Cyber Security of Critical Infrastructures (3 credits)

CS 546 Computer Security (3 credits)

CS 575 Software Security (3 credits)

ITM 530 Predictive Analytics (3 credits)

ITM 560 Cloud Computing (3 credits)

MATH 508 Advanced Asymmetric Cryptography and Cryptanalysis (3 credits)

MATH 509 – Symmetric Key Cryptography and Cryptanalysis (3 credits)

MBA 509 Data Management and Analytics (3 credits)

MBA 510 Operations and Supply Chain Management (3 credits)

MBA 569 Information Technology and Process Management (3 credits)

BUSMBA 535 Information Technology and Business Alignment (4 credits)

Or other courses approved by the program

Cybersecurity Culminating Experience (3 credits)

CYBER 692 Capstone Course (3 credits) OR CYBER 590 Practicum/Internship (3 credits)

Total Credits: 31 - 34

COURSE DESCRIPTIONS

CORE COURSE FOR ALL EMPHASES

CYBER 500: INTRODUCTION TO CYBERSECURITY (3-0-3) (F)

Introduction to various aspects of cybersecurity, including roles and responsibilities, threats and vulnerabilities, policies, risk management, information assurance, quantifying information content, algorithmic, software and hardware storage, transport and safeguarding of information, technology and human factors. PREREQ: Admission to the Master of Science in Cyber Security program or PERM/INST.

COMPUTER SCIENCE EMPHASIS COURSE DESCRIPTIONS

- **CS 507 COMPUTING FOUNDATIONS FOR COMPUTATIONAL SCIENCE (3-0-3)(F).**

Introduction to the basic techniques, tools and principles of writing high-quality code in scientific computing. Topics include: overview of relevant compiled and interpreted languages, data structures, algorithms, complexity of algorithms, sorting and searching, writing, testing, and debugging scientific code, profiling and improving performance, portability and scalability. PREREQ: Regular admission to Computational Science and Engineering emphasis or Cybersecurity emphasis of the Doctor of Philosophy in Computing program or Master of Science in Cybersecurity or PERM/INST.

- **CS 508 NETWORK AND SYSTEM FOUNDATIONS FOR CYBERSECURITY (3-0-3)(S).**

Introduction to system programming and networking for cybersecurity. Topics include: shell scripting; process management; network models; routing protocols; TCP/IP basics, applications, and security; system and network vulnerabilities and attacks. PREREQ: Regular admission to the Cybersecurity Emphasis of the Doctor of Philosophy in Computing or Master of Science in Cybersecurity.

- **CS 524 CYBER SECURITY OF CRITICAL INFRASTRUCTURES (3-0-3)(S)(Odd years).** Explores vulnerabilities, threats, and mitigating controls of critical infrastructures. Examines industry standards, and protocols for protection of critical infrastructures. Discusses environmental, operational, and economic impacts of attacks and supporting mitigating controls. PREREQ: Regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Cybersecurity.
- **CS 546 COMPUTER SECURITY (3-0-3)(F).** Computer and network security. Public-key and private-key cryptography, authentication, digital signatures, key exchange, key management, certification authorities, and distributed trust models. File system security, mail system security, and web security. Intruders, trojan horses, and viruses. Covert channels. Projects will involve using currently available security tools. PREREQ: regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Cybersecurity.
- **CS 567 APPLIED CRYPTOGRAPHY (3-0-3)(F)(Even years).** A study of how modern cryptographic protocols and schemes work, and how they are used in real-world applications. Topics include stream ciphers, block ciphers, public-key cryptography, RSA cryptosystem, public-key cryptosystems based on the discrete logarithm problem, digital signatures, and hash functions. PREREQ: Regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Cybersecurity.
- **CS 575 SOFTWARE SECURITY (3-0-3)(S)(Even years).** Principles, techniques, and best practices for developing secure software. Emphasizes the security ramifications for different activities of software development processes. Topics include security policies, security requirements analysis, threat modeling, secure design, secure programming, and security testing and verification. PREREQ: Regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Cybersecurity.
- **CS 622 ADVANCED NETWORK SECURITY (3-0-3)(S)(Odd years).** Explores security aspects of emergent network environments, including multiparty, cellular, sensor, VoIP, smart grid, and SDN environments. Focuses on intrusion detection, intrusion prevention, traffic analysis, and responses to network attacks. PREREQ: CS 525, CS 546, and regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Cybersecurity.

CRYPTANALYSIS AND SIGNALS ANALYSIS EMPHASIS COURSE DESCRIPTIONS

- **MATH 504 Number Theory (3-0-3)(S).** Quadratic residues, Representing numbers as sums of squares, Continued fractions, Diophantine equations Including Pell's equation, arithmetic functions and Mobius Inversion, the distribution of prime numbers, primality testing, factoring natural numbers. PREREQ: MATH28, MATH305.
- **MATH 572 COMPUTATIONAL STATISTICS (3-0-3)(S).** Introduction to the trend in modern statistics of basic methodology supported by state-of-art computational and graphical facilities, with attention to statistical theories and complex real world problems. Includes: data visualization, data partitioning and resampling, data fitting, random number generation, stochastic simulation, Markov chain Monte Carlo, the EM algorithm, simulated annealing, model building and evaluation. A statistical computing environment will be used for students to gain hands-on experience of practical programming techniques. PREREQ: MATH 361 or PERM/INST.
- **MATH 508 ADVANCED ASYMMETRIC CRYPTOGRAPHY AND CRYPTANALYSIS (3-0-3)(F).** An in-depth study of elliptic curves, asymmetric cryptography, pairing-based cryptography, digital signatures and analysis of cryptographic security. PREREQ: MATH 305 or MATH 307 or MATH 308 or CS 567 or PERM/INSTR.
- **MATH 509 SYMMETRIC KEY CRYPTOGRAPHY AND CRYPTANALYSIS (3-0-3)(S).** With the emergence of 5G and the Internet of Things (IoT) there is a significant shift and new developments in the field of symmetric key cryptography and in the security analysis of symmetric key cryptographic protocols. This course gives an overview of block ciphers, S-box design, algebraic structure of standard as well as lightweight symmetric cryptographic protocols. Security evaluation of modern symmetric key ciphers based on algebraic-, linear-, differential- cryptanalysis and side channel attacks. PREREQ: MATH 307 or MATH 308 or MATH 408 or CS 567.
- **MATH 510 QUANTUM AND POST_QUANTUM CRYPTOGRAPHY (3-0-3)(F).** Overview of the quantum informational techniques and security, fundamentals of quantum information theory, quantum communication networks and protocols. PREREQ: MATH 408, or MATH 409, or PHYS 309 and PHYS309L
- **MATH 667 (CS 667) ADVANCES IN APPLIED CRYPTOGRAPHY (3-0-3)(S)(Even Years).** Secure two-party and multiparty computation, proof by simulation, cryptographic commitments, sigma protocols, zero-knowledge proofs, advanced authenticated key exchange protocols, identification protocols and

their security. PREREQ: Regular admission to Doctor of Philosophy in Computing or Master of Science in Computer Science or Master of Science in Mathematics or Master of Science in Cybersecurity.

- **ECE 650 STOCHASTIC SIGNALS AND SYSTEMS (3-0-3)(S).** Probability theory for countable and uncountable sample spaces. Topics include random variables, conditional probability, independence, transformation of random variables and their distributions, conditional expectation, mean-square estimation and the orthogonality principle. Stochastic processes studied include Bernoulli, geometric, Poisson, white noise, random walk, and Brownian motion.

MANAGEMENT EMPHASIS

- **ITM 556 MANAGING INFORMATION SECURITY (3-0-3)(F)** Students will Evaluate governance and standards frameworks, write security policy documents, develop strategies, perform threat modeling on projects, and develop training and awareness programs. PREREQ ITM 455 or CYBER 500 [Could be cross-listed with a CORE class]
- **ITM 557 SECURITY ANALYTICS (3-0-3)(S)** Students will evaluate and deploy SIEM software, perform data analytics on security data, investigate security incidents, simulate security incidents, and evaluate security metrics. PREREQ ITM 455 or CYBER 500
- **BUSMBA 500 INTRODUCTION AND BUSINESS FOUNDATIONS (0-0-1)(F/S/SU)** Provides self-paced initial foundation or refresher in basic financial accounting, micro-economics, statistics, and spreadsheets. Also includes an introduction to the online learning environment, the learning management system used by the students, and Boise State University academic policies and resources. (Pass/Fail.) PREREQ: ADM/PROG. COREQ: BUSMBA 501.
- **BUSMBA 501 DESIGN THINKING AND STRATEGIC MANAGEMENT (4-0-4)(F/S/SU)** Examines collaborative innovation processes that are transforming business and driving industry life cycles. Includes a first exposure to the creation of functional, business-level, and corporate-level strategies. Special consideration of organizational design, diversification, mergers and acquisitions, and measures of strategic performance including use of Balanced Scorecards. Interpersonal skills enhanced via online collaboration with classmates. PREREQ: ADM/PROG. COREQ: BUSMBA 500.

- **BUSMBA 510 PEOPLE AND ORGANIZATIONS (4-0-4)(F/S/SU).** Emphasizes integrated manager-employee relations in an organization. Includes HR planning, employee recruitment, selection, performance appraisal, discipline, coaching, compensation, and termination issues. Also focuses on collaboration, group dynamics, motivation, leadership, problem-solving, negotiation, and self management. Interpersonal skills enhanced via online collaboration with classmates. PRE/COREQ: BUSMBA 500 and BUSMBA 501.
- **BUSMBA 540 MANAGING SUCCESSFUL PROJECTS (4-0-4)(F/S/SU).** Introduces and provides experience in the front-end issues of project management such as team formation, communication strategies, conflict management, project constraints, and risk analysis. Includes use of the project management tools: PERT/Critical Path, resource utilization, project monitoring and tracking, and critical chain analysis. Includes application projects in industry sectors of student's choosing. PRE/COREQ: BUSMBA 500 and BUSMBA 501.

SECTION III: APPLICATION, ADMISSION, AND SELECTION PROCESS

APPLICATION DEADLINES

- Students may apply to the Graduate College at any time
- The application deadlines for the Master of Science in Cybersecurity are December 1st for Spring admission and July 15th for Fall admission.

ADMISSION REQUIREMENTS

Graduate College Admission Requirements

The following are minimum admission requirements of the Graduate College:

- A baccalaureate degree from a regionally accredited U.S. college or university, or a degree from a non-U.S. institution of higher education that is judged equivalent to a U.S. baccalaureate degree by the International Admissions Office.
- A cumulative undergraduate grade point average (GPA) of at least 3.00 (on a 4-point scale). If you have below a 3.00 you should contact your program's coordinator for more information.
- International students must submit Official TOEFL or IELTS results. Both test English language proficiency. International students also must provide documentation to demonstrate they have adequate financial resources to cover one year of living expenses, tuition, and fees.

Applicants that are not admitted to the Graduate College are eliminated from consideration for admission to the MS program. Furthermore, being admitted into the Graduate College does not mean that you are, or guarantee that you will be, admitted into the MS program.

Master of science in Cybersecurity Program Requirements

To be considered for the Master of Science in Cybersecurity program, applicants must meet the following requirements:

- At least a baccalaureate degree (in any academic discipline) from a regionally accredited U.S. college or university or a degree from a non-U. S. institution of higher education that is judged equivalent to a U.S. baccalaureate degree by the International Admissions office.

Applicants who are a senior in good academic standing can request an exception to this requirement.

- An undergraduate grade point average (GPA) of 3.00 (based on a 4-point scale) computed for all undergraduate credits from the applicant's most recent baccalaureate degree.

*Students with a GPA lower than 3.0 may require special provisions for admission to the program.

Admission to the MS program is based on:

- Official Transcripts from all colleges attended.
- A current resume/CV
- A 500 word personal statement including information about your future career goals and how this program will help you achieve those goals, and any evidence describing your preparedness and fit for the program.

NOTE: The GRE or GMAT scores are NOT required. Submission of one recommendation letter is strongly encouraged, but not required.

APPLICATION PROCESS

Master of Science in Cybersecurity Program

To apply for admission to Boise State University students must complete the following steps before the program deadline:

➤ **Step 1: Submit Materials to Graduate College**

Complete the following documents and send them to the graduate college via email at gradcoll@boisestate.edu:

- Graduate College [Admission form](#)
- Current Resume or CV
- Personal statement including information about your future career goals and how this program will help you achieve those goals, any work experience or academic successes, and any other information that could provide evidence of your motivation, skills, and character.

➤ **Step 2: Submit Official Transcripts**

Official transcripts must be sent by your previous school, or an approved transcript service provider. Please review this page for full details [How to Submit Official Transcripts](#)

➤ **Step 3: Committee Review and Recommendation**

The program's admission committee will review each candidate's application on a rolling basis and make a recommendation to either accept or deny the application. All materials must be submitted before the committee will review an application.

➤ **Step 4: Graduate College Review and Notification**

The program will forward their recommendation to the Graduate College. The Graduate college will then review the admission recommendation, make a final decision, and notify students of their acceptance status. Please note that the selection of candidates and processing by the Graduate College can take 2-4 weeks following the application deadline.

Accelerated Masters Program Requirements

Current Boise State Undergraduate students may apply to join the program on an accelerated track that will allow them to complete their masters degree in as little as a year after completion of their bachelor's degree. Students must meet the following requirements to be eligible for consideration for the accelerated track:

- Complete and pass at least 75 credits towards bachelor's degree.
- Complete the following course depending on emphasis of interest by the end of the semester the program application is submitted:
 - CS321 for students interested in a Computer Science Emphasis.
 - MATH307 for Cryptanalysis and Signals Analysis Emphasis.
 - ITM455 for Management Emphasis.
- Overall GPA of at least 3.0 on a 4.0 scale.
- Upper Division GPA of at least 3.3 on a 4.0 scale.
- Check "yes" on the Accelerated Masters Item on Page 2 of the Graduate College Application form

Meeting these eligibility requirements does not guarantee acceptance into the accelerated master's degree programs and the Dean of the Graduate College will make the final decision on whether an undergraduate student is accepted into this program. When students in the accelerated program complete their undergraduate degree requirements, they will receive their bachelor's degree and will then be classified as graduate students to continue their studies in the master's program.

SECTION IV: ACADEMIC ADVISING AND PROGRAM POLICIES

Academic Advisor

The program administrator will select an academic advisor for you at the time of admission. During your first semester in the program, you will work with your academic advisor to develop an approved Plan of Study (POS). While developing your POS, you will select elective courses and create a plan that identifies the semester in which you will take all of your courses. When registering in subsequent semesters, you will use your POS to ensure you are signing up for all of the courses necessary to graduate by your anticipated graduation date. If at any point you need to make changes to your POS, you can make an appointment with your academic advisor to update your plan.

Either the student or the program may request an advisor change to match the student's academic interests or professional goals. Any advisor change should be the result of consultation among the student, current advisor, proposed advisor, and program administrator.

Academic Standards

The expectation of the program is that students earn a 3.00 grade point average (GPA) or better in their coursework. Any student with a GPA below 3.00 is ineligible to graduate. Students with a cumulative grade point average below 3.00 at the end of an enrolled semester will be placed on academic probation. At the end of the next enrolled semester (including summer), the graduate college will review the student's progress and take one of the following actions:

- A. Remove the student from probation if their cumulative grade point average is 3.00 or above.
- B. Continue the student on probation if the cumulative GPA is below 3.00 and the semester GPA is 3.00 or above. Students may continue on probation for an unlimited number of semesters, but will remain ineligible for graduation until their cumulative grade point average is 3.00 or above at the end of their graduation semester.
- C. Dismiss the student from their graduate program and Boise State University if both their semester and cumulative GPA is below 3.00. Students who are dismissed are administratively withdrawn from their courses and cannot register for classes until they are reinstated to the program or readmitted to the Graduate College.

In each case, the Graduate College informs the program and student via email using the student's Boise State email address.

GRADUATE CATALOG

The Boise State Graduate Catalog is published annually, usually late in the spring semester. It contains information vital to the program, including schedules of deadlines for exams, projects and more. You are responsible for meeting all deadlines and are encouraged to read the parts of the Graduate Catalog which apply to your program. We recommended that you retain all graduate catalogs during your tenure at Boise State University. As a rule of thumb, the curriculum you should follow is that which was published in the catalog the first year of your attendance. However, a student may elect to graduate under the curriculum of any academic year in which enrolled in the MS program.

Graduate Degree Time Limit for Completion

The Boise State University Graduate College regulations provide that all requirements for a master's degree must be satisfied within seven years. The seven-year interval commences during the semester in which the student completes the first MS course; and, the interval must include the date of graduation.

Students whose course work exceeds the seven-year limit must submit a formal request for an extension to the Administrator of the MS Program. The request must include an explanation for the delay in completing the program as well as the student's plan to complete the degree requirements within the requested extension period.

After consultation with faculty in the MS program, the Program Administrator may recommend a waiver to the Graduate Dean. If the Dean approves the request for extension, the Program may require one or more of the following additional degree requirements:

- Submission of a paper discussing major new developments in the MS core areas in which the outdated course(s) was (were) taken;
- Revalidation of a course(s) through an oral exam, written exam, or repeating the course(s).

INCOMPLETE POLICY

According to University regulations, a grade of incomplete can be given when a student's work has been satisfactory up to the last three weeks of the semester. The student has one year to complete the work assigned by

his/her instructor. If the work is not completed by that time, a failing grade will be given.

A contract will be written between the student and the instructor that will include the conditions for satisfying the incomplete. That contract and any exams to be completed will be retained in the student's file in the office of the MS Administrator.

DISCIPLINARY REMOVAL FROM THE PROGRAM

Students are referred to the Boise State University Graduate Catalog for policies related to dismissal actions. All students have the right to appeal any dismissal action. Please consult the [Graduate College Policy and Procedure Manual](#) for procedural details.

Appeals Process

Any complaint or problem the student has regarding work or behavior in class should immediately be brought to the attention of the instructor for prompt resolution.

- If satisfactory resolution cannot be obtained after consulting with the course instructor, the complainant should bring the concern to the MS Program Administrator.
- If a satisfactory resolution is not obtained after consultation with the Program Administrator the complainant may contact the Graduate College (graduatecollege@boisestate.edu), follow the guidelines outlined by the [Academic Grievance \(Policy 3140\)](#) in the Boise State Policy Manual, or refer to the [Graduate College Policy and Procedure Manual](#).

Complaints, problems, or concerns regarding the MS Program should be brought to the attention of the Program Administrator or the Dean of the Graduate College.

Financial Aid, Assistantships, and Scholarship Opportunities

Students admitted to the program may be eligible for merit-based scholarships through the Graduate College. Visit the [Graduate College Scholarships and fellowships](#) web page for full details. Additional scholarship opportunities for international students can be found via [Boise State Global Education Graduate Student Funding](#).

SECTION V: CULMINATING ACTIVITY AND GRADUATION

CULMINATING EXPERIENCE

For the culminating activity you must enroll in either CYBER 692 Capstone Course (3 credits) OR CYBER 590 Practicum/Internship (3 credits).

Capstone Course (CYBER 692)

The purpose of a capstone project is to identify and address cyber-related challenges through systematic study. The project must be unique and offer a meaningful contribution to the field of cybersecurity. The student will be required to submit a final report of the project.

Practicum/Internship Credit (CYBER 590)

The following information is provided to help you understand how to obtain credit for internships. Boise State requires concurrent registration during the semester the internship work is performed. This means that if your internship takes place during the fall semester, you must register and pay for the internship credits during fall semester. You must do this even if your internship is a full-time position and you are not taking any other classes.

Note: An "internship" can be a permanent, full-time job. Internship credit applies not only to a position that an employer designates as an "intern." You may receive "internship" credit for full-time work that you do in cybersecurity.

To receive internship credit you need to do the following:

- Obtain employment that qualifies for accounting internship credit. The type of work must relate directly to a graduate class that you have or will be taking.
- Add the internship as a Boise State class. If you are not a full-time student you will have to pay the additional per credit fees for adding the class. You cannot enroll for an internship on the regular class registration site at myBoiseState. To enroll for an internship you must complete an online internship application. The application is available on the Boise State website at the Career Center (<http://career.boisestate.edu/>). Please follow the link to the "Internship Application for Academic Credit". Please plan ahead as there are deadlines for adding an internship each semester.

- You will receive one credit hour for each 45 hours of work directly related to some area of cybersecurity. The work must involve responsibilities related to your graduate program. The maximum hours you will receive credit for is 135 hours because the maximum credits earned for a graduate internship is 3 credits.
- INTERNSHIP PAPER: To receive credits for your internship, you must submit an internship paper one week prior to the last day of classes. The following topics are to be included:
 - *Company information and Internship position and responsibilities* - Give a brief description of the company and describe the job that you did at this company and how that experience relates to your program. Be sure to link specific theories and concepts from your business coursework to your practical experiences.
 - *Evaluation of the overall success of the internship* – Discuss the strengths and the weaknesses of your effort. Provide a summary of the values or lessons learned from your internship.
 - *Paper Guidelines* - Length: Between 3 and 5 pages; 11 point font, conventional margins, double spaced. This paper should be well written and free of grammatical errors.

APPLYING FOR GRADUATION

You must apply for graduation no later than the end of the first week of the semester you intend to graduate (see Section IV above, or find the current [Academic Calendar](#) for the exact date). To ensure your candidacy, please review your degree progress report on MY.BOISESTATE with your academic advisor. You may apply for graduation by logging on to your MY.BOISESTATE student account.

A non-refundable \$25.00 graduation application fee must be paid when applying. A graduation evaluator will review your application after the 10th day of the semester in which you intend to graduate. Upon review of your application, you will receive an email notifying you if you are a valid candidate for graduation.

To obtain a graduate degree from the Master of Science in Cybersecurity program you must:

- Complete the number of credits specified for the graduate degree
- Attain a Cumulative GPA of 3.00 or above
- Meet the course requirements for each emphasis
- Not have a grade of I (incomplete) on your record
- Complete and pass culminating activity including an internship or capstone course.

- Complete the graduation application by the posted deadline

Important Dates and Deadlines for Candidacy and Graduation

Step 1 Application for Admission to Candidacy (AAC)

The AAC is a form all graduate students submit before they apply for graduation. The AAC can be submitted as soon as one half of the total credit requirements for the degree or certificate is completed, or no later than the deadline specified on the academic calendar.

Step 2 Application for Graduation

Due the 1st Friday of the semester you plan to graduate (requires signature of advisor & a \$25.00 fee to the Graduate College)

Step 3 Complete Culminating Project

Students must complete either the Cyber 692 Capstone Course or Cyber 590 Practicum/Internship by the end of their graduating semester.

SECTION VI: STUDENT SUPPORT SERVICES

Before You Begin (Post-Admission Process)

To provide a smooth transition into the Master of Science in Cybersecurity program, please take time to do the following:

BEFORE YOU ARRIVE ON CAMPUS

- **My.boisestate.edu account**

When your application was originally processed, you received a notification letter from the Graduate College containing your username, student ID Number, and Boise State email address. Set up your my.boisestate account by going to my.boisestate.edu using the login information provided in the letter. My.boisestate.edu is your source for all of your campus information. You can access your email, calendar, course websites, student center, and much more through this portal.

- **Email**

Boise State students receive email via BroncoMail. Your BroncoMail address is typically your first and last name followed by @u.boisestate.edu. As a graduate assistant, you will also receive an employee email address. Employee email addresses are typically the employee's first and last name followed by @boisestate.edu. Employee email accounts are immediately deactivated if your employment is suspended. *Thus, we recommend that you use your BroncoMail email account as your primary account and forward your employee email to your BroncoMail account. You are responsible for checking both accounts.*

- **Housing**

Ample housing options are available near campus. You can work with [University Housing](#) for on-campus options if you apply early. [The Boise Chamber of Commerce](#) has information and resources about moving to Boise that may be helpful. If you are using Craigslist or Classified Ads, common searches for housing near the university (less than 3 miles away from campus) include BSU, Downtown Boise, East End, North End, the Bench, and Southeast Boise. Peruse the bulletin boards in the Student Union Building (SUB) if you are already on campus.

With your Advisor and the Program Coordinator

- **Coordinate your start date with your Program Coordinator.** Most students will start one week before the first day of classes of the designated semester.
- **Discuss first semester courses & register online.** You should discuss your graduate course plan with your Program Coordinator. During orientation, the week before classes program staff will discuss how to create a course plan.
- **Course Registration.** To register for classes, use the student center on my.boisestate.edu. Instructions are found online on the [registrar's website](#).

AFTER YOU ARRIVE ON CAMPUS

- **Visit the Program Administrator.** The Program Administrator can provide you with detailed information on room and building access, payroll, and resources available to you. Labs, workspace, and other resources will vary based on your area of emphasis.
- **Obtain your Boise State University identification, the "BroncoCard"**
After completing your employment documents at Human Resources, take your Student ID # and valid photo ID to the BroncoCard office in the Student Union Building to obtain your BroncoCard. Be sure to request a proxy BroncoCard. Your BroncoCard gives you card reader access to select laboratories and study areas. You will use your BroncoCard to access the Recreation Center, purchase meal plans, and can also, optionally, make cashless purchases on campus with [Bronco Bucks](#). More information about your BroncoCard can be found at the [BroncoCard website](#).
- **Purchase a Parking Pass if you plan to park on campus**
Parking on University Drive and other city-maintained streets is permitted without a Boise State parking permit. Signs posted on city-maintained streets describe any restrictions. Otherwise, parking on campus requires a Boise State parking permit. [You can purchase your parking permit](#) and find out more about transportation options online.

**Students who will take classes in the Computer Science facilities in Downtown Boise should review the specific [transportation and parking options available](#) for City Center Plaza.

EXPECTATIONS

When you come to Boise State, we agree to offer our time and resources in exchange for your commitment to make your best effort. To ensure that we all know the expectations, the School, College, and University have policies in place with which you should be

familiar. These policies are outlined in this handbook, the [Boise State University Student Handbook](#), [Boise State University Policies](#), [Student Code of Conduct](#), [Graduate Catalog](#) and Graduate [College Policy and Procedure Manual](#). Please take the time to read and understand these policies.

If questions arise that are not addressed within this handbook or within the policies outlined by Boise State University and the Graduate College, please contact the Program Administrator or the co-Directors for further assistance.

Safety

Most students in the Master of Science in Cybersecurity program will not work in labs with extensive safety regulations, but please consult with your major advisor to ensure you are aware of and compliant with any applicable regulations or university policies.

Academic Integrity

Academic integrity is a core belief of the Master of Science in Cybersecurity, participating departments, the College of Engineering, College of Arts and Sciences, College for Business, Graduate College and Boise State University. Cheating, plagiarism, and academic dishonesty in the classroom or in research endeavors are serious offenses that will be addressed. All forms of academic dishonesty can lead to suspension or expulsion from the University. The University [Academic Integrity Policy](#) can be found on the registrar's website.

A student who has cheated will be assigned a course grade of F, be excluded from the course, and be referred to the Dean of Students for disciplinary action (common examples of such action include academic probation, suspension, and expulsion from the university).

TRANSFER CREDITS

A student may be allowed to transfer credits to satisfy requirements for the Cybersecurity program. All credit transfer requests must first be approved by the program. If approved by the program, students must submit a "Request for Approval of Transfer Credits" form to the Boise State Graduate College <https://www.boisestate.edu/graduatecollege/forms/>.

STATEMENT OF SHARED VALUES¹⁰

Boise State University is committed to personal and social development, educational excellence and civic engagement. Membership in the campus community is a privilege and requires its members to conduct themselves ethically with integrity and civility. Campus community members enjoy the same rights and freedoms that all U.S. citizens enjoy, including personal responsibility for one's own

conduct, behavior and speech.

In a culture of intellectual inquiry and debate, where the search for knowledge and discovery flourish, campus community members are expected to demonstrate civility, abide by norms of decorum and adhere to the principles of civil discourse. "Being civil means being constantly aware of others and weaving restraint, respect and consideration into the very fabric of this awareness," (Forni, 2002, p. 9).

Higher education has the duty to educate students to be responsible citizens. Boise State strives to provide a culture of civility and success where all feel safe and free from discrimination, harassment, threats or intimidation.

Boise State University upholds the following values as the foundation for a civil and nurturing environment. Campus community members are expected to adhere to these common values.

Academic Excellence – engage in our own learning and participate fully in the academic community's pursuit of knowledge.

Caring – show concern for the welfare of others.

Citizenship – uphold civic virtues and duties that prescribe how we ought to behave in a self-governing community by obeying laws and policies, volunteering in the community and staying informed on issues.

Fairness – expect equality, impartiality, openness and due process by demonstrating a balanced standard of justice without reference to individual bias.

Respect – treat people with dignity regardless of who they are and what they believe. A respectful person is attentive, listens well, treats others with consideration and doesn't resort to intimidation, coercion or violence to persuade.

Responsibility – take charge of our choices and actions by showing accountability and not shifting blame or taking improper credit. We will pursue excellence with diligence, perseverance and continued improvement.

Trustworthiness – demonstrate honesty in our communication and conduct while managing ourselves with integrity and reliability.

¹⁰ Source: <https://president.boisestate.edu/values/statement-of-shared-values/>. Sources used within the Statement of Shared Values: Forni, P.M. (2002). Choosing civility: The twenty-five rules of considerate conduct. New York: St. Martin's Griffin; Josephson, M. (2002). Making ethical decisions. Los Angeles: Josephson Institute of Ethics