FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification

a. Proposed prefix and number: DFSC 7354
b. Proposed title (30 Character Max): Intrusion Forensic Analysis
c. Proposed catalog description including prerequisites and credit: This course provides the study and practices of intrusion detection, vulnerability assessment, and penetration testing. Topics include traffic analysis, intrusion detection methods and systems, Intrusion detection system evaluation, vulnerabilities and assessment, methods, techniques, and tools for penetration testing, and system and network security evaluation and assessment. Prerequisite: DFSC 5410. Credit 3.

d. Companion course/Co-requisite: None
e. May course be repeated for credit? No
f. Maximum number of credit hours that can be earned: 3
g. Is course eligible to receive a grade of IP? No If yes, justification:
h. Is this course exempt from the 3-peat charge? No; If yes, justification:
i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) No ; if yes, attach Writing Enhancement Supplement.
j. Identify the majors and/or minors for which this course will be required: None
k. Identify the majors and/or minors for which this course may be an elective: The proposed Doctor of Philosophy in Digital and Cyber Forensic Science

II. Statement of Need and Program Compatibility

a. Justify the need for this course, including how the proposed course will support the present program curriculum.
This course is an elective for the proposed PhD program in Digital and Cyber Forensic Science. The skill sets preferred for today's digital and cyber forensic scientists and researchers include an in-depth knowledge of the mechanisms, methods, and tools of intrusion detection and penetration testing. Intrusion detection and prevention are front-line defense mechanism for government, business, and industry. Penetration testing establishes the quality of those defense mechanisms. Penetration testing is a specialized area and therefore not central to the proposed curriculum; however, it is sufficiently important to warrant an elective course.

b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
This course will be taught in the fall semester of odd numbered years beginning in the third year of the program. It will add .145 FTE to the departmental annual course load and constitutes three elective hours within the required 85 hours in the proposed doctoral program in Digital and Cyber Forensic Science. The load addition will be accommodated by an increase in FTE faculty as indicated in the program proposal. In subsequent years, the load addition will be offset by the introduction of teaching assistant support in the baccalaureate programs offered within the department. Overall load management calculations for the program, including this course, are provided in the program proposal.

c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
None

d. Identify who is likely to be the instructor(s) of this course.
This course could be taught by existing faculty, in particular Drs. Peter Cooper, Umit Karabiyik, Qingzhong Liu, Narasimha Shashidhar, and Cihan Varol.

III. Course Content

a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).

Upon completion of this course, the student will be able to:

1. Explain the mechanisms, methods, and tools used in intrusion detection and penetration testing.
2. Discuss how the practices of intrusion detection and penetration testing are beneficial to digital and cyber forensics.
3. Develop methodologies/tools for intrusion detection and penetration testing.
4. Perform penetration testing on unsecured, poorly secured, and well secured systems.
5 Perform a network/system security assessment.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

Author	Title And Publisher	Year
Jason Luttgens, Matthew Pepe, & Kevin Mandia	Incident Response & Computer Forensics (3rd Edition); McGraw-Hill Osborne Media ISBN-10: 0071798684 ISBN-13: 978-0071798686	2014

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

Week 1	Network Protocols and Traffic Analysis
Week 2	Intrusion Detection Systems (IDS) and Models
Week 3	Open Source IDS: Snort and Bro
Week 4	Open Source IDS: Snort and Bro (cont.)
Week 5	IDS Challenges and Evaluations
Week 6	System and Network Vulnerabilities
Week 7	System and Network Vulnerabilities (cont.)
Week 8	Methods, Techniques, and Tools for Vulnerability Assessment
Week 9	Hackers, Attacks, Hacking Tools and Techniques
Week 10	Hackers, Attacks, Hacking Tools and Techniques (cont.)
Week 11	Penetration Testing: Goals, Methods, Techniques, and Tools
Week 12	Penetration Testing: Goals, Methods, Techniques, and Tools (cont.)
Week 13	System and Network Security Evaluation and Assessment
Week 14	Research Paper/Project Development
Week 15	Presentations, Discussions, and Reviews

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the **types** of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

Types of print/electronic library resources needed	**Extent of use anticipated (on a scale of 0 to 7)**
Scholarly, Peer-Reviewed Journals	3
Electronic Databases	7
Books	4
Trade Journals	0
Newspapers	1
Popular Magazines	0
Audio-Visual	0

Other (please specify)	5 (standards documentations of NIJ, DoD, NIST, NSA)

b. Please identify **specific** resources that the Library needs to **acquire** in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

New titles needed or subject area to be enhanced:
None

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
None

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.

Form Revised: February 2011 Date Created: 7/14/2018

FORM B
—CHECK LIST—
Please check each box to verify review.

Overall

☒ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.

☒ Font is Times New Roman, 11 pt, no bold, no "all caps."

☒ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.

☒ Every question has a response. If there is not an affirmative response, use "N/A," "No," or "None" as appropriate.

Part I - V

☒ I.c. The catalog description is in complete sentences.

- ☒ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
- ☒ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
- ☒ Use terms such as "basic," "fundamental," "introduction," and "overview" sparingly. Upper division courses should seldom be introductory.

☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Dr. Peter Cooper	02/10/15	Dr. Marcus Gillespie	09/14/15
Department Chair Signature	Date	College Curriculum Committee Chair Signature	Date

Form Revised: February 2011 Date Created: 7/14/2018

LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: DFSC 7354
Proposed Title: Intrusion Forensic Analysis

1. Results of the librarian's review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.
   The Newton Gresham Library's holdings support the proposed course. A subject heading search in the Newton Gresham Library online catalog reveals book collections under several appropriate subject headings. These subject headings are alphabetically listed along with the number of books found: Computer Crimes Case Studies – 10 titles; Computer Crimes Investigation – 118 titles; Computer Crimes Prevention – 81 titles; Computer Networks – 5007 titles; Computer Networks Security Measures – 871 titles; Computer Security – 1222 titles; Electronic Evidence – 15 titles; Evidence, Criminal – 99 titles; Forensic Research – 11 titles; Forensic Sciences Data Processing – 15 titles; Internet Security Measures – 178 titles; Intrusion Detection Systems Computer Security – 10 titles

   The Newton Gresham Library owns an E-book copy of the required text: Incident Response & Computer Forensics by Jason Luttgens.

   The Newton Gresham Library also maintains subscriptions to several electronic databases which index and abstract, with some providing full-text access to, articles published in scholarly, peer-reviewed journals, trade publications and magazines in relevant areas including: ACM Digital Library (Association for Computing Machinery), Computer Source, IEEE Computer Science Digital Library, Newspaper Source.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.
   No additional resources will be needed.

3. Bibliographer's comments (state any concerns regarding the library's support of the course).
   It is the opinion of this bibliographer that the Newton Gresham Library contains the information resources to provide support to this proposed course.

Signed: W. Cole Williamson Date: 03/02/15
Bibliographer

Signed: Ann Holder by Linda Meyer Date: 03/03/15
Library Director

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WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number: DFSC 7354
Proposed Title: Intrusion Forensic Analysis

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

N/A

Reviewer's Notes: N/A

Signed: _____ Date: _____
Writing Enhanced Committee Chair