REAL Curriculum Program Alignment Proposal

Department or School: Department of Information Technology   Date: 3/16/2020

Degree type: ☒BS ☐BA ☐BBA ☐BSN ☐BM ☐BFA ☐BSW ☐Minor ☐Certificate

Program: Cybersecurity

REAL Area Program Designation Sought (check all that apply):   ☒ R   ☐ E   ☐ A   ☒ L

Dept/School Contact: Art Carter, aecarter@radford.edu

- MATH 172 - Calculus and Analytic Geometry II
- Any 200-level or above Math course
- ASTR 111 - General Astronomy I
- ASTR 112 - General Astronomy II
- Any Biology (except BIOL 301 and BIOL 302)
- Any Chemistry
- Any Geology
- Any Physics
- GEOS 250 - Introduction to GIS (T)
- PHYS 301 - Meteorology

Note(s):

BS/BA Requirements:

- Any degree program that fulfills a REAL area must include at least 9 unique credit hours for each area covered. At least 3 of these 9 credit hours must be at the 300 level or above
- A single major degree program may fulfill no more than three REAL areas for any one student, unless all four REAL areas are fulfilled by accreditation or licensure requirements.
- A single minor or certificate degree program may fulfill no more than two REAL areas.
- Degree program may cover up to two REAL areas using a single prefix.
- All courses documenting the coverage of a REAL area must fulfill all learning outcomes and be designated in that area.
- All courses that document fulfillment of a REAL area within a degree program of study are NOT required to be taught by the department/school. However, departments/schools are expected to formally communicate with other departments about reliance on and inclusion of courses in their degree program plans of study. Indicate this through signature of chair or director of the partnering department or school in the areas below.
- Departments or schools that seek to fulfill REAL areas must acknowledge assessment requirements for those areas. Assessment of degree seeking students is required to be conducted yearly by the department or school offering the degree program.
- If departments or schools want to use a menu of courses to fulfill a particular area, please duplicate the sections below for each REAL area and include information for each course included in the menu of options.

- Please save this file for submission as PROGRAM NAME_ProgramType.docx (Example: Criminal Justice_BS.docx)

By signing, the department/school acknowledges the above conditions and considerations:

Dept/School Signature	Date:

Official Program Description:

Please paste the entire official program description from the Radford University catalog in the space within this box. Find those here: https://catalog.radford.edu/

Please note that every department/school will have to submit a catalog change proposal for program that asks the Registrar's Office to insert language about the program coverage of the REAL areas into the official Radford University catalog upon approval.

Degree Core Requirements (63-68 credits)

- ITEC 110 - Principles of Information Technology
- ITEC 120 - Principles of Computer Science I
- ITEC 322 - Discrete Mathematics
- ITEC 220 - Principles of Computer Science II
- ITEC 225 - Web Programming I
- ITEC 310 - Programming in C and Unix
- ITEC 340 - Database I
- ITEC 345 - Introduction to Information Security
- ITEC 350 - Introduction to Computer Networking
- ITEC 352 - Computer Organization
- ITEC 371 - Operating Systems
- ITEC 445 - Computer System and Database Security
- ITEC 455 - Applied Cryptography and Network Security
- ITEC 465 - Computer System Security Analysis and Investigation Techniques
- ITEC 466 - Information Assurance Management
- ITEC 475 - Security of Cyber-Physical Systems
- ITEC 490 - IT Professionalism
- BLAW 203 - Legal Environment of Business
- CRJU 412 - Security Administration and Crime Prevention
- MATH 171 - Calculus and Analytic Geometry I
- or
-
- MATH 168 - Calculus I with Integrated Precalculus I
- and
- MATH 169 - Calculus I with Integrated Precalculus II
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- STAT 200 - Introduction to Statistics
- or
- STAT 301 - Probability and Statistics I

SCIENTIFIC AND QUANTITATIVE REASONING

SCIENTIFIC AND QUANTITATIVE REASONING

R Area: Course Prefix: ITEC Course Number: 120 Course Title: Principles of Computer Science I Credit Hours: 4 New course: ☐ Yes ☒ No Revised course: ☐ Yes ☒ No Projected student enrollment per academic year: 75	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☐ Yes ☒ No If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:
R Area: Course Prefix: ITEC Course Number: 220 Course Title: Principles of Computer Science II Credit Hours: 4 New course: ☐ Yes ☒ No Revised course: ☐ Yes ☒ No Projected student enrollment per academic year: 40	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☐ Yes ☒ No If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:
R Area: Course Prefix: ITEC Course Number: 322 Course Title: Discrete Math for Computer Science Credit Hours: 3 New course: ☐ Yes ☒ No Revised course: ☒ Yes ☐ No Projected student enrollment per academic year: 20	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☐ Yes ☒ No If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:

R Designated Course Required within the Program of Study Approved for Inclusion in the General Education Coursework: ITEC 120, ITEC 220

R Area:
Learning Goal: To apply scientific and quantitative reasoning to questions about the natural world, mathematics, or related areas.

Learning Outcome 1: Students apply scientific and quantitative information to test problems and draw conclusions.	Description of learning outcome assessment plan: Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.

Learning Outcome 2: Students evaluate the quality of data, methods, or inferences used to generate scientific and quantitative knowledge.	Description of learning outcome assessment plan: Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.
Additional information for REAL Council consideration:	

APPLIED LEARNING

L Area: Course Prefix: ITEC Course Number: 225 Course Title: Web Programming I Credit Hours: 3 New course: ☐ Yes ☒ No Revised course: ☐ Yes ☒ No Projected student enrollment per academic year:	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☒ Yes ☐ No If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:
L Area: Course Prefix: ITEC Course Number: 350 Course Title: Introduction to Computer Networking Credit Hours: 3 New course: ☐ Yes ☐ No Revised course: ☐ Yes ☐ No Projected student enrollment per academic year:	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☒ Yes ☐ No If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:
L Area: Course Prefix: ITEC	Is this course required or an elective for your degree program? ☒ Required ☐ Elective Is this course offered within your dept/school? ☒ Yes ☐ No

Course Number: 340 Course Title: Database I Credit Hours: 3 New course: ☐ Yes ☒ No Revised course: ☐ Yes ☒ No Projected student enrollment per academic year:	If no, collaborating dept/school must also complete the remaining elements, and must sign below. Course Rotation: ☒ Fall ☒ Spring ☐ Intersession ☐ Other (Explain below) Intended Frequency: ☐ Every academic year ☒ Every semester ☐ Every other year ☐ At least once every three years ☐ Other Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:
L Designated Course Required within the Program of Study Approved for Inclusion in the General Education Coursework: (please list at least one, can also be listed above but does not need to be)	

L Area: Learning Goal: To explore professional practice through the application of knowledge, skills, and critical reflection.	
Learning Outcome 1: Students apply acquired knowledge and skills to develop professional identity or professional practice.	Description of learning outcome assessment plan: Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.
Learning Outcome 2: Students critically reflect on their learning, abilities, experiences, or role within professional contexts.	Description of learning outcome assessment plan: Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.
Additional information for REAL Council consideration:	

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Are existing material resources adequate to support this program alignment proposal?
☒ Yes ☐ No If not, what additional material resources would be needed?

Are existing space resources adequate to support this program alignment proposal?
☒ Yes ☐ No If not, what additional space resources would be needed?

Are existing human resources adequate to support this program alignment proposal?
☒ Yes ☐ No If not, what additional human resources would be needed?

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Department Curriculum Committee Recommendation:	Signature:	Date:
Chair/Dean on Behalf of Dept/School:	Signature:	Date:
College Curriculum Committee Approval:	Signature:	Date:
Dean/AVP Approval:	Signature:	Date:
REAL Council Recommendation:	Signature:	Date:
Faculty Senate Curriculum Committee Recommendation:	Signature:	Date:
Faculty Senate Approval:	Signature:	Date:
Provost Approval:	Signature:	Date: