# CYBERSECURITY ANALYTICS AND OPERATIONS, B.S. (UNIVERSITY COLLEGE) 

Begin Campus: Any Penn State Campus
End Campus: Beaver, Brandywine, Greater Allegheny, Lehigh Valley, Schuylkill, York

## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years' suggested academic plans, please visit the archive (https:// bulletins.psu.edu/undergraduate/archive/) to view the appropriate Undergraduate Bulletin edition (Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

## Cybersecurity Analytics and Operations, B.S. at Beaver Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

| First Year |  |  |
| :---: | :---: | :---: |
| Fall | Credits Spring | Credits |
| IST 140 (*\# or CMPSC | 3 IST 220*\# | 3 |
| $\begin{aligned} & 121 \text { (GQ)\#† } \\ & \text { or CMPSC } \\ & \left.131^{* \#}\right)^{1,2} \end{aligned}$ |  |  |
| Application Focus Selection 1 (GS) (IST 110) | 3 IST $242{ }^{\star \# 1}$ | 3 |
| ENGL 15 or 30 H (GWS) | 3 Application Focus Selection 1 (GS) ${ }^{4,5}$ | 3 |
| $\begin{aligned} & \text { MATH } 110 \text { or } \\ & 140(\mathrm{GQ})^{\star+2,3} \end{aligned}$ | 4 General Education Course (GN) ${ }^{6}$ | 3 |
| First Year Seminar (IST 111S) | 1 CAS 100 $(G W S)^{\ddagger}$ | 3 |
| SRA 111* | 3 CYBER 100*\# | 3 |
|  | 17 | 18 |
| Second Year |  |  |
| Fall | Credits Spring | Credits |
| IST 210*\# | 3 STAT 200 ( $\ddagger$ <br> (GQ) or SCM $200 \ddagger$ (GQ) or DS 200*) | 4 |
| IST $230{ }^{*}$ | 3 SRA 211* | 3 |


| Application <br> Focus Selection <br> 2 (IST 331) | $\begin{aligned} & 3 \text { General } \\ & \text { Education } \\ & \text { Selection (GA/ } \\ & \mathrm{GH})^{4} \end{aligned}$ | 3 |  |
| :---: | :---: | :---: | :---: |
| CYBER 262* | 3 General Education Course (GN) ${ }^{6}$ | 3 |  |
| SRA $211^{*}$ | 3 IST 256 | 3 |  |
|  | ENGL 202C or 202D (GWS) | 3 |  |
|  | 15 | 19 |  |
| Third Year |  |  |  |
| Fall | Credits Spring | Credits Summer | Credits |
| General <br> Education <br> Selection (GA/ <br> GH) | 3 SRA $365{ }^{*}$ | 3 IST 495 ${ }^{7}$ | 1-3 |
| SRA 231* | 3 IST 454* | 3 |  |
| IST 451* | 3 Application Focus Selection 4 (IST 411) | 3 |  |
| SRA 211* | 3 IST 390 | 1 |  |
| Application Focus Selection 3 (IST 311) ${ }^{5}$ | 3 CYBER 362* | 3 |  |
| Health and Wellness (GHW) | 1.5 CYBER $366^{*}$ | 3 |  |
|  | 16.5 | 16 | 1-3 |
| Fourth Year |  |  |  |
| Fall | Credits Spring | Credits |  |
| General <br> Education <br> Selection (GA/ <br> GH) | $\begin{aligned} & 3 \text { CYBER } 440 \\ & \text { (GWS) }^{*} \end{aligned}$ | 3 |  |
| General Education Course (GA/GH) | 3 Application Focus Selection 5 (IST 413) | 3 |  |
| General <br> Education <br> Course (GN) | 3 IST 456* | 3 |  |
| Health and Wellness (GHW) | 1.5 Natural Sciences (GN) | 3 |  |
| IST 495* | 1 CYBER 342W* | 3 |  |
| IST 432* | 3 SRA 311 * | 3 |  |
| Elective | 3 |  |  |
|  | 17.5 | 18 |  |
| Total Credits 138-140 |  |  |  |
| * Course requires a grade of $C$ or better for the major <br> $\ddagger$ Course requires a grade of C or better for General Education <br> \# Course is an Entrance to Major requirement <br> † Course satisfies General Education and degree requirement |  |  |  |
| Since IST 240 will not be offered at this campus, these courses are required courses for ISTBS or ISSCC at Brandywine. <br> ${ }^{2}$ Course substitutions required for Computer Science minor. |  |  |  |

${ }^{3}$ MATH 110 or MATH 140 required for graduation requirements. HS Trigonometry or MATH 22 required for admission.
4 Students must complete three (3) credits of United States Cultures (US) and three (3) credits of International Cultures (IL) as part of General Education, choice of course may vary.
5 Application Focus Selection: Consider courses toward a minor like Business, Peace and Conflict Studies, or Computer Science.
6 Recommend one (1) GN selection be FRNSC 100 Intro to Forensic Science before taking IST 454 Cyber Forensics.
7 One internship for credit is required to complete degree requirements, a maximum of three internships for credit are allowed.

## University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, $M, X$, and $Y$ are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and $G Q$ ) require a grade of ' $C$ ' or better.

## Advising Notes:

- Students should consult with an adviser when scheduling courses.
- See Adviser for Internship Preparation (CNED 280) - recommended elective; offered every semester.


## Cybersecurity Analytics and Operations, B.S. at Brandywine Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

## First Year

| Fall | Credits Spring | Credits Summer | Credits |
| :---: | :---: | :---: | :---: |
| CYBER 100** | 3 IST 220*\# | 3 IST $495{ }^{8}$ | 1 |
| IST 111S (FYE) | 1 IST $242{ }^{\text {*\#1 }}$ | 3 |  |
| IST 140*\#1,2 | 3 SRA 221 * | 3 |  |
| ENGL 15 or 30 H (GWS) | 3 Application Focus Selection 1 (GS) ${ }^{4,5}$ | 3 |  |
| $\begin{aligned} & \text { MATH } 110 \\ & (\text { GQ })^{* 2,3} \end{aligned}$ | 4 Natural <br> Sciences (GN) ${ }^{6}$ | 3 |  |
| SRA 111* | 3 CNED $280{ }^{7}$ | 1 |  |
|  | 17 | 16 | 1 |

## Second Year

| Fall | Credits Spring | Credits Summer | Credits |
| :---: | :---: | :---: | :---: |
| IST $230{ }^{*}$ | 3 IST 210*\# | 3 IST $495{ }^{8}$ | 1 |
| IST 261* | $\begin{aligned} & 3 \text { STAT } 200 \\ & (\mathrm{GQ})^{\star \#} \end{aligned}$ | 4 |  |
| CYBER 262* | 3 SRA 211* | 3 |  |
| Application Focus Selection $2^{5}$ | $\begin{aligned} & 3 \text { General } \\ & \text { Education } \\ & \text { Selection (GA/ } \\ & \mathrm{GH})^{4} \end{aligned}$ | 3 |  |
| CAS 100A (GWS) | 3 Natural <br> Sciences (GN) ${ }^{6}$ | 3 |  |
| DS 120 <br> (Recommended) | 1 |  |  |
|  | 16 | 16 | 1 |

## Third Year

| Fall | Credits Spring | Credits Summer | Credits |
| :--- | ---: | ---: | ---: |
| General | 3 SRA $365^{\star}$ | 3 IST $495^{8}$ | 1 |

## Education

Selection (GA/
GH) ${ }^{4}$

| ENGL 202C or 202D (GWS) | 3 IST 454* | 3 |  |
| :---: | :---: | :---: | :---: |
| SRA 231* | 3 CYBER 362* | 3 |  |
| IST 451 ${ }^{*}$ | 3 CYBER 366* | 3 |  |
| Application Focus Selection $3^{5}$ | 3 SRA 311* | 3 |  |
| Health and Wellness (GHW) | 1.5 |  |  |
|  | 16.5 | 15 | 1 |

## Fourth Year



## Total Credits 131

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of C or better for General Education
\# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement
${ }^{1}$ Since IST 240 will not be offered at this campus, these courses are required courses for ISTBS or ISSCC at Brandywine.
${ }^{2}$ Course substitutions required for Computer Science minor.
${ }^{3}$ MATH 110 or MATH 140 required for graduation requirements. HS Trigonometry or MATH 22 required for admission.
${ }^{4}$ Students must complete three (3) credits of United States Cultures (US) and three (3) credits of International Cultures (IL) as part of General Education, choice of course may vary.
${ }^{5}$ Application Focus Selection: Consider courses toward a minor like Business, Peace and Conflict Studies, or Computer Science.
${ }^{6}$ Recommend one (1) GN selection be FRNSC 100 Intro to Forensic Science before taking IST 454 Cyber Forensics.
7 See Adviser for Internship Preparation (CNED 280) - recommended elective; offered every semester.
${ }^{8}$ One internship for credit is required to complete degree requirements, a maximum of three internships for credit are allowed.


## University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).
$\mathrm{W}, \mathrm{M}, \mathrm{X}$, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain
attribute is used to fill audit requirements. Foundations courses (GWS and $G Q$ ) require a grade of ' $C$ ' or better.

## Advising Notes:

- Students should consult with an adviser when scheduling courses.


## Application Focus Lists

Students pick one of the four tracks below. Students should take one course that meets the GS requirements. Students must pick six (6) credits at the 400 level. All 12 credits must be in the same application focus area.

| Business (Minor) <br> Code |  |  |
| :--- | :--- | ---: |
| ECON 102 | Title | Credits |
| or ECON 104 | Introductory Microeconomic Analysis and Policy | 3 |
| ACCTG 211 | Financial and Managerial Accounting for Decision | 4 |
|  | Making | 3 |
| MGMT 301 | Basic Management Concepts | 3 |
| MKTG 301 | Principles of Marketing | 3 |
| IST 432 | Legal and Regulatory Environment of Information | 3 |
|  | Science and Technology (Required for CYAOP <br> major) |  |
|  |  |  |

One (1) three credit 400-level business course from the following 3 disciplines: ${ }^{1}$
Accounting
Business Administration
Business Law
Energy Business and Finance
Economics
Entrepreneurship
Finance
Financial Services
Health Policy and Administration
International Business
Management Information Systems
Management
Risk Management
Supply Chain Management
Statistics
${ }^{1}$ Each 400 -level business course will have different prerequisites; make sure to confirm meeting prerequisites before scheduling

## Computer Science (Minor)

Requires planning and decision during NSO to schedule CMPSC required courses.

| Code | Title | Credits |
| :--- | :--- | ---: |
| MATH 140 | Calculus With Analytic Geometry I (Course | 4 |
|  | Substitute for MATH 110) |  |
| CMPSC 121 | Introduction to Programming Techniques (Course <br> Substitute for IST 140) $^{2}$ | 3 |
| CMPSC 122 | Intermediate Programming | 3 |
| CMPSC 221 | Object Oriented Programming with Web-Based <br> Applications | 3 |
| CMPSC 360 | Discrete Mathematics for Computer Science | 3 |


| CMPSC 462 or CMPSC 465 | Data Structures <br> Data Structures and Algorithms | 3 |
| :---: | :---: | :---: |
| Two (2) additional work in computer | I CMPSC courses for six more credits of 400 -level science | e 6 |
| ${ }^{1}$ Prerequisite: ALEKS score > 75 or MATH 22 and MATH 26 <br> 2 Prerequisite: ALEKS score $>45$ |  |  |
| Peace and Conflict (Minor) |  |  |
| Code | Title | Credits |
| PLSC 14 | International Relations | 3 |
| PLSC 291 | Introduction to Peace and Conflict Studies | 3 |
| PLSC 491 | Peace and Conflict Studies Seminar | 3 |
| SRA 211 | Threat of Terrorism and Crime (Required for CYAOP Major) | 3 |
| Two (2) additional CAS 404; COMM 4 | 400-level courses from approved list (e.g., 458) | 6 |
| Health Policy and Administration (via DLC from consortium) |  |  |
| Code | Title | Credits |
| HPA 101 | Introduction to Health Services Organization | 3 |
| HPA 332 | Health Systems Management | 3 |
| HPA 470 | Health Care Information Management | 3 |
| BBH 440 | Principles of Epidemiology | 3 |

## Custom

Custom 4-course application focus provides coherent sequence in Cybersecurity context for student in terms of three credits of GS coursework and must contain six credits of 400 -level coursework.

Examples are student taking courses to receive Homeland Security minor, Criminal Justice minor, Cybersecurity Computational Foundations minor (variant of Computer Science minor), or Crime, Law, and Psychology minor.

Requires completion and submission of Custom 4-Course Focus Approval Form.

## Cybersecurity Analytics and Operations, B.S. at Greater Allegheny Campus

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## First Year

| Fall | Credits Spring | Credits |
| :--- | :---: | ---: |
| CYBER 100S (FYS) $)^{\star \#}$ | 3 IST $220^{\star \#}$ | 3 |
| IST $140^{\star \#}$ | 3 IST $242^{\star \#}$ | 3 |
| ENGL 15 or $30 \mathrm{H}(\mathrm{GWS})^{\ddagger}$ | 3 SRA 221 | 3 |
| MATH $110^{\star \ddagger}$ | 4 Application Focus Selection | 3 |
|  | 1 (GS/GHW) |  |
| SRA $111^{\star+}$ | 3 General Education Selection | 3 |
|  | $\mathbf{1 6}$ | $\mathbf{1 5}$ |

## Second Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| IST 230* | 3 IST 210*\# | 3 |
| IST 261* | 3 SRA $211^{*}$ | 3 |
| CYBER 262* | 3 STAT 200 ${ }^{\star} \ddagger \#$ | 4 |
| CAS 100A (GWS) ${ }^{\ddagger}$ | 3 ENGL 202C or 202D ${ }^{\ddagger}$ | 3 |
| General Education Selection | 3 General Education Selection | 3 |
|  | 15 | 16 |

## Third Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| General Education Selection | 3 CYBER 342W* | 3 |
| CYBER 362* | 3 CYBER $366{ }^{*}$ | 3 |
| SRA 231* | 3 SRA 311* | 3 |
| SRA $365{ }^{*}$ | 3 Application Focus Selection $3$ | 3 |
| Application Focus Selection 2 | 3 General Education Selection | 3 |
| General Education Selection | 1.5 |  |
|  | 16.5 | 15 |
| Fourth Year |  |  |
| Fall | Credits Spring | Credits |
| IST 456* | 3 CYBER 440* | 3 |
| SRA 472* | 3 IST 432* | 3 |
| IST 451 ${ }^{*}$ | 3 IST 454* | 3 |
| General Education Selection | 3 Application Focus Selection $4$ | 3 |
| General Education Selection | 1.5 Elective | 2 |
| Elective | 3 IST 495 ${ }^{\text {* }}$ | 1 |
|  | 16.5 | 15 |

## Total Credits 125

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of C or better for General Education
\# Course is an Entrance to Major requirement
$\dagger$ Course satisfies General Education and degree requirement


## University Requirements and General Education Notes:

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Advising Notes:

- CYBER, IST, and SRA courses have enforced prerequisites
- 1 credit of IST 495 IST Internship is required


## Cybersecurity Analytics and Operations, B.S. at Lehigh Valley Campus

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## First Year

| Fall | Credits Spring | Credits |
| :--- | :---: | ---: |
| IST $140^{\star \#}$ | 3 SRA $221^{\star}$ | 3 |
| SRA $111^{\dagger}$ | 3 IST $220^{\star \#}$ | 3 |
| CYBER 100 ® $^{\star \#}$ | 3 Application Focus Selection | 3 |
|  | 1 |  |
| MATH $110^{\ddagger \dagger}$ | 4 General Education Selection | 3 |
| ENGL 15 or $30 \mathrm{H}(\mathrm{GWS})^{\ddagger \dagger}$ | 3 IST $242^{\star \#}$ | 3 |
|  | $\mathbf{1 6}$ | $\mathbf{1 5}$ |

## Second Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| IST $230{ }^{*}$ | 3 IST 210*\# | 3 |
| IST 261* | 3 SRA $211^{*}$ | 3 |
| CYBER 262* | 3 STAT $200^{\ddagger \# \dagger}$ | 4 |
| CAS 100A ${ }^{\ddagger+}$ | 3 ENGL 202C or 202D ${ }^{\ddagger+}$ | 3 |
| General Education Selection | 3 General Education Selection | 3 |
|  | 15 | 16 |
| Third Year |  |  |
| Fall | Credits Spring | Credits |
| CYBER 362* | 3 CYBER 342W* | 3 |
| SRA $231{ }^{*}$ | 3 CYBER 366* | 3 |
| SRA $365{ }^{*}$ | 3 SRA 311* | 3 |
| General Education Selection | 3 Application Focus Selection 3 | 3 |
| General Education Selection | 1.5 General Education Selection | 3 |
| Application Focus Selection 2 | 3 |  |
|  | 16.5 | 15 |

## Fourth Year

| Fall | Credits Spring | Credits |
| :--- | :---: | ---: |
| IST $456^{*}$ | 3 CYBER $440^{*}$ | 3 |
| SRA $472^{*}$ | 3 IST $432^{\star}$ | 3 |
| IST 451* | 3 IST 454 | 3 |
| General Education Selection | 3 Application Focus Selection | 3 |
|  | 4 |  |
| General Education Selection | 1.5 Elective | 2 |
| Elective | 3 IST 495 | 1 |
|  | $\mathbf{1 6 . 5}$ | $\mathbf{1 5}$ |

## Total Credits 125

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of C or better for General Education
\# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement


## University Requirements and General Education Notes:

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$W, M, X$, and $Y$ are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and $G Q$ ) require a grade of ' $C$ ' or better.

## Cybersecurity Analytics and Operations, B.S. at Schuylkill Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

## First Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| CYBER 100*\#1 | 3 IST 220*\# | 3 |
| IST 140*\# | 3 IST $242{ }^{\star \# 2}$ | 3 |
| ENGL 15 or $30 \mathrm{H}^{\ddagger}$ | 3 MATH 110 or $140{ }^{\text {* }} 3$ | 4 |
| SRA 111 (GS) ${ }^{*+}$ | 3 SRA 221* | 3 |
| PSU 8 (FYS) | 2 General Education Course | 3 |
| General Education Course | 3 |  |
|  | 17 | 16 |

## Second Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| IST 230* | 3 IST 210*\# | 3 |
| IST $261{ }^{* 4}$ | 3 SRA $211^{*}$ | 3 |
| CYBER 262* | 3 STAT 200 (GQ) ${ }^{* \pm \# 5}$ | 4 |
| CAS 100A ${ }^{\ddagger}$ | 3 ENGL 202C or 202D ${ }^{\ddagger}$ | 3 |
| Application Focus Selection $1^{6}$ | 3 General Education Course | 3 |
|  | 15 | 16 |
| Third Year |  |  |
| Fall | Credits Spring | Credits |
| General Education Course | 3 CYBER 342W* | 3 |
| CYBER 362* | 3 CYBER 366* | 3 |
| SRA $231{ }^{*}$ | 3 SRA $311^{*}$ | 3 |
| SRA $365{ }^{*}$ | 3 General Education Course | 3 |
| Application Focus Selection $2^{6}$ | 3 General Education Course | 3 |

15
15

## Fourth Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| IST 456* | 3 CYBER 440* | 3 |
| IST 451* | 3 IST 432* | 3 |
| Application Focus Selection $3^{6}$ | 3 IST 454* | 3 |
| General Education Course | 3 General Education Course or Elective | 3 |
| Elective | 3 Elective | 3 |
|  | IST 495*7 | 1 |
|  | 15 | 16 |

## Total Credits 125

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of $C$ or better for General Education
\# Course is an Entrance to Major requirement
$\dagger$ Course satisfies General Education and degree requirement

1 Students enrolled at Schuylkill campus must take CYBER 100 and schedule the PSU 8 First-Year Seminar (FYS) course. If you have taken CYBER 100S elsewhere, it may be accepted as an alternative to CYBER 100 to satisfy the Entrance-to-Major requirement.
2 CMPSC 122 or CMPSC 132 may be substituted as an alternative to IST 242 to satisfy the Entrance-to-Major requirement.
${ }^{3}$ MATH 140 may be substituted as an alternative to MATH 110.
${ }^{4}$ IST 256 or IST 361 may be substituted as an alternative to IST 261.
${ }^{5}$ SCM 200 may be substituted as an alternative to STAT 200 to satisfy the Entrance-to-Major requirement.
${ }^{6}$ Students satisfy the Application Focus Area requirement by taking 9 credits of coursework in an approved application track or custom focus area, including a minimum of 3 credits of 400 -level coursework in the area. Students may optionally take a 4th course in an approved Application Focus Area track or choose a related elective in their senior 7 year.
71 credit of IST 495 is required. A grade of $C$ or better must be earned in this course. This requirement can be completed at any time before graduation. Up to 3 internship credits may be earned during your degree work.

## University Requirements and General Education Notes:

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$\mathrm{W}, \mathrm{M}, \mathrm{X}$, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of ' $C$ ' or better.

## Cybersecurity Analytics and Operations, B.S. at Shenango Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

## First Year

| Fall | Credits Spring | Credits |
| :--- | :---: | ---: |
| CYBER 100 or $100 S^{\star \#}$ | 3 IST $210^{\star \#}$ | 3 |
| IST $140^{\star \#}$ | 3 IST $220^{\#}$ | 3 |
| CAS $100^{\ddagger}$ | 3 SRA $111^{\star}$ | 3 |
| MATH $110^{\star \ddagger}$ | 4 ENGL 15 or $30 H^{\ddagger}$ | 3 |
| General Education Course | 3 Application Focus Selection | 3 |
| PSU 8 | $1(\mathrm{GS} / \mathrm{GHW})$ |  |
|  | 17 | $\mathbf{1 5}$ |

## Second Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| CYBER 262* | 3 IST 261* | 3 |
| IST $242{ }^{\text {* }}$ | 3 SRA $211^{*}$ | 3 |
| STAT $200^{\star \ddagger \#}$ | 4 SRA $221{ }^{*}$ | 3 |
| General Education Course | 3 IST 230* | 3 |
| Application Focus Selection 2 | 3 General Education Course | 3 |
|  | 16 | 15 |

## Third Year

| Fall | Credits Spring | Credits |
| :--- | :--- | ---: |
| CYBER $362^{*}$ | 3 CYBER $342 W^{*}$ | 3 |
| IST $451^{*}$ | 3 IST $454^{*}$ | 3 |
| SRA $231^{*}$ | 3 SRA $311^{*}$ | 3 |
| SRA $365^{*}$ | 3 CYBER $366^{*}$ | 3 |
| Application Focus Selection | 3 ENGL 202C or 202D |  |
| $\ddagger$ <br> General Education Course | 3 IST $495^{* 1}$ | 3 |
|  | $\mathbf{1 8}$ | $\mathbf{1}$ |

## Fourth Year

| Fall | Credits Spring | Credits |
| :--- | :---: | ---: |
| IST $456^{*}$ | 3 CYBER $440^{*}$ | 3 |
| SRA 472* | 3 Application Focus Selection | 3 |
|  | 4 |  |
| IST 432* | 3 General Education Course | 3 |
| General Education Course | Elective or US Cultures (US) <br> or International Cultures (IL) | 3 |
| General Education Course | 3 General Education Course | 3 |
|  | $\mathbf{1 5}$ | $\mathbf{1 5}$ |

## Total Credits 127

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of $C$ or better for General Education
\# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement
${ }^{1} 1$ credit of IST 495 is required. A grade of $C$ or better must be earned in this course. This requirement can be completed at any time before graduation.


## University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).
$W, M, X$, and $Y$ are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and $G Q$ ) require a grade of ' $C$ ' or better.

## Program Notes:

IST 495 (1-credit internship) can be taken in any semester during the third and fourth year, including Summer, but must be completed before or during the $8^{\text {th }}$ semester. Students may enroll in IST 495 up to 3 times in 3 different semesters ( 3 different internships). See your adviser for more guidance.

## Cybersecurity Analytics and Operations, B.S. at York Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

## First Year

| Fall | Credits Spring | Credits |
| :--- | :--- | ---: |
| CYBER 100 or $100 \mathrm{~S}(\mathrm{FYS})^{\star \#}$ | 3 IST $210^{\star \#}$ | 3 |
| IST $140^{\star \#}$ | 3 IST $220^{\star \#}$ | 3 |
| ENGL 15 or $30 \mathrm{H}(\mathrm{GWS})^{\ddagger}$ | 3 IST $242^{\star \#}$ | 3 |
| SRA $111(\mathrm{GS})^{\star+}$ | 3 General Education Course | 3 |
| General Education Course | 3 General Education Course | 3 |
|  | $\mathbf{1 5}$ | $\mathbf{1 5}$ |


| Second Year |  |  |
| :---: | :---: | :---: |
| Fall | Credits Spring | Credits |
| SRA 221* | 3 IST 230* | 3 |
| CYBER 262* | 3 IST 261** | 3 |
| MATH 110 (GQ) ${ }^{\text { }} \ddagger$ | 4 SRA $211^{*}$ | 3 |
| CAS 100A (GWS) ${ }^{\ddagger}$ | 3 STAT 200 (GQ) ${ }^{\text {* }}$ \# | 4 |
| General Education Course | 3 Application Focus Selection 1 (GS/GHW) | 3 |
|  | 16 | 16 |

## Third Year

| Fall | Credits Spring | Credits |
| :---: | :---: | :---: |
| IST 451* | 3 CYBER 366* | 3 |
| SRA $231{ }^{*}$ | 3 IST 432* | 3 |
| ENGL 202C or 202D (GWS) ${ }^{\ddagger}$ | 3 SRA 311* | 3 |
| Application Focus Selection 2 | 3 SRA $365{ }^{*}$ | 3 |
| General Education Course | 3 General Education Course | 3 |
| General Education Course | 1.5 |  |
|  | 16.5 | 15 |
| Fourth Year |  |  |
| Fall | Credits Spring | Credits |
| CYBER 362* | 3 CYBER 440*2 | 3 |
| CYBER 342W* | 3 IST 454* | 3 |
| IST 456* | 3 General Education Course | 3 |
| Application Focus Selection 3 | 3 Elective | 3 |
| General Education Course | 3 IST 495* | 1 |
| General Education Course | 1.5 |  |
|  | 16.5 | 13 |

## Total Credits 123

* Course requires a grade of C or better for the major
$\ddagger$ Course requires a grade of C or better for General Education
\# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement
${ }^{1}$ Cross-list with IST 361 Application Development Design Studio II
${ }^{2}$ Cross-list with IST 440W Information Sciences and Technology Integration and Problem Solving


## University Requirements and General Education Notes:

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## Advising Notes:

- Application Focus Lists:
- Business:
- Students should choose 2 courses from the following: ACCTG 211, MGMT 301, or MKTG 301.
- Select 3 credits at the 400 -level from: ACCTG, BA, BLAW,EBF, ECON, ENTR, FIN, FINSV, HPA, IB, LER, MIS, MGMT, MKTG, RM, SCM, or STAT.
- Note: MGMT 301 and MKTG 301 both require ECON 102 or ECON 104 as prerequisites, so students should take ECON 102/ECON 104 as their GS selection.
- Note: IST 432 counts toward the business minor.
- Custom:
- Custom 3 credit application focus provides coherent sequence in Cybersecurity context for student in terms of three credits of GS coursework and must contain 3 credits of 400-level courses.
- Examples are student taking courses to receive Homeland Security minor, Criminal Justice minor, Cybersecurity Computational Foundations minor (variant of Computer Science minor), or Crime, Law, and Psychology minor.
- Requires completion and submission of Custom 4-Course Focus Approval Form.

