

ALERT!

Students who begin college in September 2014 must follow the Michigan Transfer Agreement (MTA) requirements rather than the MACRAO requirements listed here. New MTA articulation guides will be posted to the EMU Community College Relations website soon. In the meantime, please see a community college counselor for more information about the MTA or look for more information at <http://www.macrao.org/mcm.asp?floor=4>

September 2011

**Delta College – Associate in Applied Science in IST/Information Assurance
Eastern Michigan University – Bachelor of Science in Information Assurance**

Delta College		Eastern Michigan University	
MACRAO Requirements	(30 credits)		(30 credits)
1. English Writing Requirement (6 credits)			(6 credits)
ENGL 111, 111A, 111C, or 111H: College Comp I.....	3	ENG L120 Composition I.....	3
ENGL 112, 112A or 112H: College Comp II.....	3	ENGL 121 Composition II.....	3
2. Math/Science Requirement (8 credits)			(8 credits)
*1 MTH 208 Elementary Statistics.....	3	MATH 170 Elementary Statistics.....	3
Complete at least 5 credit hours:.....	5	One or two courses:.....	5
Choose from courses approved by Delta College to satisfy the MACRAO lab science requirement.		Courses may transfer as equivalent courses, general education credit, or general transfer credit	
3. Humanities Requirement (8 credits)			(9 credits)
* COM 114 Interpersonal Communication (Delta requirement).....	3	CTAC 227 Interpersonal Communication.....	3
* PHL 210 Information Technology Ethics & Law (Delta Reqmt).....	2	PHIL 000 (PHL 210 with CST 133 is equivalent to COSC 105)....	2
Complete one course (See NOTE below).....	3	One course.....	3
Choose courses approved by Delta College to satisfy the MACRAO humanities requirement.		Courses may transfer as equivalent courses, general education credit, or general transfer credit	
4. Social Science Requirement (See note below) (8 credits)			(8 credits)
PSY 211 General Psychology (Delta requirement).....	4	PSY 101 General Psychology Lecture (3)+1.....	4
POL 104 American Government (Delta requirement).....	4	PLSC 112 American Government.....	4
NOTE: In completing the MACRAO Requirements, choose <u>one course</u> from the following to satisfy EMU's Perspectives on a Diverse World requirement: Humanities: COM 245; IHU 202, 234; LIT 228, 229, 260, 269, 274, 277, 278, 285; MUS 120; or, Social Science: GEO 113; HIS 214, 215, 217; POL 220, 221, 225, 241; SOC 215, 216, 231; SSI 120 or 234; Science: BIO 110			
Delta College Major/Area Requirements		(52 credits)	
* CST 120 PC Operating Syst Com Line Int (DOS) (1) and		IA 212 Open Systems Platform/Network Admin.....	3
* CST 126 Unix/Linux Operating System (2).....	3	IA 215 System Support & Troubleshooting (3)+1.....	4
* CST 128 PC Hardware Concepts & Troubleshooting.....	4	COSC 105 Everyday Computing & Social Responsibility (3)+1.....	4
* CST 133 Computer Concepts & Competencies (with PHL 210)....	4	IA 103 Information Security Overview.....	3
* CST 150 Info Security Policies, Procedures & Fundamentals.....	3	University Elective.....	3
CST 152 Implementing Network Security.....	3	University Elective.....	3
CST 153 Implementing Firewalls.....	3	University Elective.....	3
CST 154 Incident Response & Disaster Recovery.....	3	University Elective.....	3
CST 156 Implementing Wireless Security.....	3	University Elective.....	3
CST 158 Network Intrusion Security Testing.....	3	University Elective.....	3
* CST 161 Networking Fundamentals.....	3	IA 210 Concepts of Network & Business Tech.....	3
² CST 164 LAN Switching and Wireless.....	3	IA 350 Network Connectivity (IANS Concentration or Univ Elec)...	3
² CST 260 Routing Protocols and Concepts (3) and			
² CST 264 Accessing the WAN (3) (Group II Elective).....	6	IA 354 Multi-Level Networking (IANS Conc. or Univ Elec).....	6
CST 266 Information Security.....	4	University Elective.....	4
Group I Electives: Choose two: CST 159,162,163, 164, 165.....	5	University Elective.....	5
LW 2 credit course or LW 1 credit course+LWA 1 credit course.....	2	PEGN 210 University Elective.....	2
EMU Requirements (may be taken at Delta College or EMU)		(9-17 credits)	
* CST 183 Java Programming.....	3	COSC 111 Intro to Programming.....	3
* CST 267 Intro to Computer Forensics.....	3	IA 427 Digital Forensics I.....	3
* OAT 152 Business Communication II.....	3	MGMT 202 Business Communication.....	3
³ MTH 161 Analytic Geometry & Calculus I (only for IAE conc).....	4	MATH 120 Calculus I (only for the IAE concentration).....	4
³ MTH 162 Analytic Geometry & Calculus II (only for IAE conc).....	4	MATH 121 Calculus II (only for the IAE concentration).....	4
Credits at Delta:.....91-99		Credits that transfer to EMU.....91-99	

* Required for EMU's Information Assurance program, all concentrations.

¹ If completed at Delta, MTH 208 satisfies EMU's Quantitative Reasoning Requirement. If MATH 170 is completed at EMU, MATH 110 is also required to satisfy the QR requirement, unless Intermediate Algebra has been completed with a "C" or better, then MATH 170 satisfies both the major and the QR requirement.

² Required for EMU's IANS Concentration or will be used as a university elective.

³ Required only for EMU's IA Encryption concentration.

**EASTERN MICHIGAN UNIVERSITY
ARTICULATION GUIDE**

September 2011

**Delta College – Associate in Applied Science in IST/Information Assurance
Eastern Michigan University – Bachelor of Science in Information Assurance**

Completion of the Information Assurance Program at EMU

Major Requirements

Foundation Course:	(15 credits)
COSC 146 Applied Programming	3
¹ IA 202L Risk-Vulnerability Analysis	3
IA 329 Policy Development in Info Assurance.....	3
LEGL 413 The Law and the Internet	3
STS 300W Research & Writing: The Tech Career	3

Concentration Requirements:

Complete one of the following concentrations:

IA Management (IAM):	(33 credits)
IA 344 Administration of Computer Systems.....	3
IA 422 Networks: Planning and Design.....	3
IA 428 Digital Forensics II	3
IA 440 Intelligence Analyst I.....	3
IA 445 Ethical Hacking and Offensive Security	3
IA 495 Networks: Implementation and Evaluation	3
IS 350 Enterprise Resource Planning	3
MGMT 386 Organizational Behavior and Theory	3
MGMT 403 Managerial Comm: Theory & Application.....	3
MGMT 480W Management Responsibility & Ethics	3
¹ Internship in MGMT or STS	3

Credits at EMU (Foundation and Concentration).....48

Credits to Graduate:.....139

OR

Applied Information Assurance (AIA):	(33 credits)
COSC 374 Applied Cryptography	3
IA 344 Administration of Computer Systems.....	3
IA 412 Linux Security Administration.....	3
IA 415 Intro to Research in Information Assurance.....	3
IA 416 Applied Research Project	3
IA 422 Networks: Planning and Design.....	3
IA 425 Cyber Crime Investigation I.....	3
IA 428 Digital Forensics II	3
IA 445 Ethical Hacking and Offensive Security	3
IS 413 Info Tech Infrastructure & Security	3
Complete one course:	3
BMMT 496 Records Admin Using Databases (3)	
IS 380 Introduction to Databases (3)	

Credits at EMU (Foundation and Concentration).....48

Credits to Graduate:.....139

OR

IA Encryption:	(25 credits)
COSC 314 Computational Discrete Structures.....	3
IA 415 Intro to Research in Information Assurance	3
IA 416 Applied Research Project.....	3
IA 440 Intelligence Analyst I.....	3
IS 413 Information Tech Infrastructure & Security	3
MATH 205 Math Structures for Computer Science.....	4
MATH 319 Mathematical Modeling.....	3
MATH 409 Cryptology.....	3

Credits at EMU (Foundation and Concentration) 40

Credits to Graduate: 139

OR

IA Network Administration/Security: (IANS)	(24 credits)
BMMT 496 Database Security	3
IA 344 Administration of Computer Systems	3
¹ IA 387 Cooperative Education	3
IA 412 Linux Security Administration	3
IA 422 Networks: Planning and Design	3
IA 445 Ethical Hacking and Offensive Security.....	3
IA 455 Network Security Hardening.....	3
IA 495 Networks: Implementation and Evaluation	3

Credits at EMU (Foundation and Concentration) 39

Credits to Graduate: 130

A minimum of 124 credits is required to graduate

¹*Satisfies EMU's Learning beyond the Classroom (LBC) requirement.*

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Additional Information:

1. In completing the coordinated program of study for this articulation agreement, course substitutions may be made with the guidance of the advisors (indicated below) at both institutions to assure that all requirements are satisfied. Delta courses indicated with an * are required for EMU's Information Assurance Program. Each institution will be responsible for determining the satisfaction of their individual program and graduation requirements.
2. Students whose transcripts are endorsed as "MACRAO Satisfied" by the community college will only be required to satisfy three of EMU's general education requirements, noted on this guide and listed below. These requirements may be completed at the most appropriate time for the student whether before or after admission to EMU:
 - a) an approved course in Quantitative Reasoning: [At Delta College MATH 118, 120, 122, 151, 161, (**208 required for this program**)] or [at EMU MATH 110; or if Intermediate Algebra is completed with a "C" or better students may choose MATH 105, 118, 119, 120, (**170 required for this program**), PHIL 181, PLSC 210, SOCL 250, or STS 224.]
 - b) a course in Perspectives on a Diverse World: [At Delta College **Humanities:** COM 245; IHU 202, 234; LIT 228, 229, 260, 269, 274, 277, 278, 285; MUS 120; or; **Social Science:** GEO 113; HIS 214, 215, 217; POL 220, 221, 225, 241; SOC 215, 216, 231; SSI 120 or 234; **Science:** BIO 110]
 - c) a Learning beyond the Classroom (LBC) course or experience offered by EMU: [an internship or co-op course, or see program coordinator for other options.]
3. *To use MACRAO, students must request an official community college transcript, with the "MACRAO Satisfied" stamp, be sent to EMU's Admissions Office. Students, who do not have "MACRAO Satisfied" on their community college transcript, will be required to satisfy EMU's general education requirements as listed in the Undergraduate Catalog. The MACRAO stamp may be completed after admission to EMU, however, students should inform advisors at EMU that they intend to complete MACRAO, or they may be advised to complete additional courses for the general education program.*
4. Only courses with a grade of "C" or better (2.0 on a 4.0 scale) will be accepted for transfer to EMU.
5. Under this agreement, EMU will waive the 60-hour rule and require that a minimum of 30 credit hours must be completed in courses offered by EMU, 15 hours of which must be in program requirements at the 300-level or above. Although 39 to 48 credit hours at EMU are listed on the attached guides, it may be possible to complete as few as 30 credits at EMU, if additional courses are approved for transfer from another college. Of the last 30 hours completed before graduation, a minimum of 10 hours must be in courses offered by EMU. A minimum of 124 credit hours, completed in-residence or accepted in transfer, is required for graduation.
6. Students must satisfy all admission requirements at the time of admission to EMU, including submitting transcripts from all previously attended colleges.
7. Students are encouraged to meet with the EMU Information Assurance Advisor early, before completing an admission application to EMU. A copy of the articulation guide should be included with the application to EMU and brought to all advising sessions. Copies of this agreement are available at www.emich.edu/ccr/artguide.htm.

Effective Dates: September 1, 2011 until August 31, 2014.

If this agreement is not renewed at the end of the effective period, students will have an additional three years to be admitted to EMU under the terms of the agreement. Students who began the program prior to the effective period may use this agreement to the extent that courses completed are consistent with the agreement.

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