



# CIS Minor Checklist

## (for Engineering Students)

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Computer Information Systems (CIS) focuses on the development and management of information systems in a business environment. Students develop the technical skills and organizational insights required to analyze, design, implement, and administer computer-based systems. At James Madison University, a B.S. in Engineering combined with a minor in CIS will prepare you to pursue a career as a consultant, systems analyst or project manager in the global IT services industry.

Course	Title	Credit hours	Completed credit hours
COB 204 <sup>1</sup>	Computer Information Systems	3	<input type="checkbox"/>
CIS 221 <sup>1,2</sup>	Principles of Programming	3	<input type="checkbox"/>
CIS 304	IT Enterprise Integration	3	<input type="checkbox"/>
CIS 330	Database Design and Application	3	<input type="checkbox"/>
CIS 454	Systems Analysis & Design	3	<input type="checkbox"/>
CIS elective <sup>3</sup>		3	<input type="checkbox"/>
		<b>18</b>	

1 A student pursuing a BS in Engineering, who has 1) achieved at least a **2.5 GPA** in **MATH 235** – Calculus I, **MATH 236** – Calculus II, **ENGR 221** – Management of Technology I, **ENGR 231** – Engineering Design I, **GWRTC 103** – Critical Reading and Writing and **COB 204** – Computer Information Systems, and has 2) completed or is currently enrolled in CIS 221 (or the equivalent), can apply for admission to the CIS minor. The application deadlines are October 15 for students planning to take upper level CIS classes in the following spring semester, and February 15 for students planning to take upper level CIS classes during the following summer or fall semesters.

2 CS 139 – Algorithm Development or ISAT 252 – Programming and Problem Solving may be substituted for CIS 221 – Principles of Programming.

3 Electives for the CIS minor include:

CIS 320: Telecommunications Processing  
 CIS 331: Intermediate Programming  
 CIS 354: Advanced Visual Basic.Net  
 CIS 363: Business Process Management  
 CIS 364: Decision Support Systems  
 CIS 366: Web Development

CIS 411: Computer Forensics for Business  
 CIS 424: Computer Security Management  
 CIS 434: Information Technology Consulting  
 CIS 463: Business Intelligence  
 CIS 464: IS Project Management  
 CIS 466: Advanced Web Development