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## Chapter 4

# Bachelor of Science Degree in Mathematics (Systems Analysis Option)

The intent of this option is to train people to apply mathematics toward the solution of problems in business, economics, and the social and behavioral sciences. The main mathematical tools needed are matrix theory, linear programming, and statistics. The requirements include an approved sequence of courses in an area of application (see Appendix F in the Degree Handbook for suggested sequences).

### Systems Analysis Option Check Sheets (120 credits)

1 MAJOR REQUIREMENTS (26-28 credits)			
MATH 140* (4) ____	CSE 121 (3) ____ OR	MATH 230 (4) ____	MATH 311W* (3) ____
MATH 141* (4) ____	CMPSC 101 (3) ____ OR	MATH 250 (3) ____ OR	
MATH 220 (2) ____	CMPSC 201C (3) ____	MATH 251 (4) ____	MATH 312* (3) ____

Total Credits: \_\_\_\_\_

**4. Bachelor of Science Degree in Mathematics (Systems Analysis Option)**

<b>2 OPTION REQUIREMENTS (53–54 credits)</b>		
MATH 414*(3) <u>    </u>	CHOOSE 3 CREDITS of 400-LEVEL MATH <b>EXCEPT:</b> MATH 401, 405, 406, 441, 470 and 471. MATH <u>                    </u> *(3) <u>    </u>	SUPPORTING COURSES (12–13)  _____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____
MATH 415*(3) <u>    </u>		
MATH 436*(3) <u>    </u>		
MATH 484*(3) <u>    </u>		
CHOOSE 6 CREDITS OF:	FOREIGN LANGUAGE (8): LEVEL I: _____(4) <u>    </u> LEVEL II: _____(4) <u>    </u>	
MATH 310*(3) <u>    </u> OR	AREA OF APPLICATION (12): _____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____	
MATH 451*(3) <u>    </u> OR		
MATH 485*(3) <u>    </u> OR		
MATH 486*(3) <u>    </u> OR		

Total Credits: \_\_\_\_\_

Foreign Language - Proficiency in a single foreign language equivalent to completion of two semesters of course work must be demonstrated. If fewer than 8 credits are needed to reach this level of proficiency, then choose courses from the Supporting Courses List (Appendix C in the Degree Handbook) to total 8 credits. Policies regarding placement in a foreign language can be found in Appendix A of the Degree Handbook.

Application Area - Choose an approved sequence of 12 credits in an area of application, have it approved by your advisor and then file a copy with the Mathematics Degree Coordinator (Dr. David Hurtubise, Hurtubise@psu.edu).

Supporting Courses A list of supporting courses is in Appendix C in the Degree Handbook. The only courses in this degree which can be scheduled under the satisfactory/unsatisfactory option are supporting courses.

Note: Requirements indicated with \* identify courses that require a minimum grade of C for graduation.

<b>3 GENERAL EDUCATION</b> (40 credits)		
ENGL 15 OR 30 (3) ____ (GWS)	ARTS (6 CR) (GA)	SOC./BEHAV.SCI (6CR) (GS)
ENGL 202 (3) ____ (GWS)	_____ ( ) ____	_____ ( ) ____
CAS 100 (3) ____ (GWS)	_____ ( ) ____	_____ ( ) ____
NATURAL SCI. (9 CR) (GN)	_____ ( ) ____	_____ ( ) ____
_____ ( ) ____	HUMANITIES (6 CR) (GH)	HEALTH/PHYS. ACT. (3 CR) (GHA)
_____ ( ) ____	_____ ( ) ____	_____ ( ) ____
_____ ( ) ____	_____ ( ) ____	_____ ( ) ____
_____ ( ) ____	_____ ( ) ____	_____ ( ) ____
WRITING ACROSS THE CURR. _____	US CULTURES (3 CR) (US)	FIRST-YEAR SEMINAR _____(1) ____
	INT'L CULTURES (3 CR) (IL)	

Total Credits: \_\_\_\_\_

General Education Courses - a description of these requirements can be found at [www.psu.edu/bulletins/bluebook/gened](http://www.psu.edu/bulletins/bluebook/gened).

Note: A student may, in consultation with the advisor and the student's college dean, develop a sequence of 9 credits in either the arts, humanities, or social or behavioral sciences by substituting 3 credits from one of the other two areas not in the student's major field of study.

US Cultures and International Cultures Requirements - Students must complete a 3-credit course in United States Cultures (US) and a 3-credit course in International Cultures (IL). See [www.psu.edu/bulletins/bluebook/gened](http://www.psu.edu/bulletins/bluebook/gened).

<b>4 REMEDIAL &amp; REPEATED COURSES</b>	<b>5 SENATE POLICY 83-80</b>	<b>6 CREDITS</b>
Courses that do not meet degree requirements:	Source/Time for credit acquisition:	Total Credits Earned: (less repeats and remedial; must have at least 120)
_____	36 of the last 60 credits at PSU?	_____
_____	_____	_____
_____	60 credits in the last 5 years?	_____
_____	_____	_____

Grand Total Credits: \_\_\_\_\_

(MUST HAVE AT LEAST 120 CREDITS TO GRADUATE.)