

# History

Contact Persons: *John Cox, Ph.D., (Chair)*

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The individual who neglects the study of history is trapped in the "prison of the present," unable to understand how humankind has arrived at its present condition and often uncertain of the changes which the future may bring. For this reason, a knowledge of history has long been one of the hallmarks of an educated person. Students are encouraged to approach their studies from a comprehensive background of materials, avoiding narrow interpretations. Thus, a major or minor in history is excellent preparation for a student who seeks to work in such fields as law, foreign service, journalism, international business, or government at all levels, as well as those who seek such professional areas as education, museum management, or archival work. Our courses stress systematic research and considerable reading and writing.

Upon completion of the history program, students will be able to demonstrate the ability to:

1. Analyze contemporary events and problems in historical perspective.
2. Demonstrate knowledge of major events, trends and personalities of the western tradition.

3. Search effectively for information on current and past topics using contemporary research tools.
4. Write factually accurate and insightful explanations of historical events.
5. Communicate factual information and research findings in a concise and articulate oral manner.

## Requirements for a History Major Bachelor of Arts Degree

### Required:

HIS 110 The Twentieth Century (3 crs)

HIS 120 Historical Methods (3 crs)

In addition to the core curriculum requirements of this catalog, history majors will complete 30 credit hours of the following courses:

HIS 211, 212 History of the American People (6 crs)

HIS 351, 352 The Western Tradition (6 crs)

(only offered every other year)

HIS 486 Senior Seminar (3 crs)

Two non-western history courses (3-6 crs)

(Non-western HIS 120 courses might count.)

See chairperson for approval.)

Three or four free history electives (9-12 crs)

(30-36 crs)

HIS 351 and HIS 352 should be taken in the sophomore or junior year, since they are only offered every other year. Otherwise, students may encounter difficulties in scheduling student teaching or other senior requirements.

## HISTORY - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	HIS 211	3	HIS 351	3	Electives	6
	HIS 110	3	HIS Elective	3	RST Elective	3	HIS 486	3
	ENG 105 or 110	3	PHI 105	3	Science	3	HIS Elective	3
	MOL 102	3	MAT/CSC	3	HIS Elective	6	RST/PHI 305	3
	SSC	3	LIT 250	3				
	FAS 101	1						
	Semester total	14		15		15		15
SPRING	HIS 120	3	HIS 212	3	HIS 352	3	HIS Elective	3
	MOL 111	3	HIS Elective	3	Global Persp.	3	Electives	12
	Electives	6	PHI 205	3	FAS 20x	2		
	LIT 120	3	RST 106/107	3	Electives	9		
			Science	3				
	Semester total	15		15		17		15
	Total Credits	29		30		32		30 121

## Requirements for a History Minor

Minors must complete seven courses including HIS 110 and the history proseminar HIS 120, one elective in each of the three areas of European, American and Non-western and two history electives.

### Core Fulfilling Course

The core requirement in history may be fulfilled by taking the following courses:

HIS 110	The Twentieth Century
HIS 120	Historical Methods

# Course Descriptions

## HIS 110 The Twentieth Century (3 crs)

This course begins with an examination of Europe's position of political, economic and military dominance in the world in the decades before World War I. After a thorough treatment of the causes and effects of the Great War and the rise of Japan to great power status, our emphasis shifts to the international economic and political problems of the interwar era. We analyze the rise of authoritarian regimes of the right and left in Europe, the civil war in China and the imperialist powers' weakening grip on their colonies in Africa and Asia. World War II and the Holocaust figure prominently in the second half of the course, as do the decolonization process, the Cold War between the U.S. and the Soviet Union and post-Cold War issues such as ethnic conflict and responses to globalization.

## HIS 120 Historical Methods (3 crs)

The content of these courses (in terms of both geographic area and historical period) varies from instructor to instructor. All are designed to familiarize students with the methods and procedures used by historians in researching and writing about important historical trends and events. Course activities include using primary and secondary sources; developing a sense of interpretation grounded in creative, but responsible scholarship; improving writing skills in analytical, response and research papers; and giving oral presentations.

## AMERICAN

### HIS 211, 212 History of the American People (6 crs)

A two-semester survey of the history of the United States emphasizing the social, cultural, political and intellectual development of the American people.

### HIS 213 The Indian in North America (3 crs)

First half of the course deals with the society and culture of our native Americans and is anthropological in nature; the second half is about Indian-White relations.

### HIS 214 History of Appalachia (3 crs)

An introduction to the history of the institutions and people of the Appalachian mountain region from the earliest years of exploration to the present.

### HIS 312 The American Revolution, 1763-1783 (3 crs)

Covers the causes of revolution, the major events of the war for independence and the emergence of the new government of the United States.

### HIS 313 The National Period of the U.S., 1783-1815 (3 crs)

Social and political history of the period; formation of the federal government; the development of the political party system.

### HIS 314 Contemporary America (3 crs)

This course examines the major political, social and cultural issues in U.S. history since 1945 and seeks to identify the major influences that have shaped contemporary America. Topics covered include the domestic impact of the Cold War, the Civil Rights movement and its legacy, the social and cultural revolution of the 1960s, Vietnam, Watergate and the emergence of the New Right.

### HIS 315 The American Civil War, 1850-1868 (3 crs)

A brief examination of the major causes and events of the war between the Union and the Confederacy.

### HIS 316 (INS 316 and POS 316) Rise of the United States as a World Power (3 crs)

This course examines the emergence of the U.S. as a world power in the first half of the 20th century, its conduct as one of the world's two super-powers during the Cold War and its role in international affairs as the world's dominant power since the collapse of the Soviet Union in 1991.

## EUROPEAN

### HIS 216 The Ancient World: Greece and Rome (3 crs)

A survey of the most important aspects of Western culture from the time of Heroic Greece to the fall of the western half of the Roman empire in the 5th century A.D.

### HIS 217 (INS 217) History of the Holocaust (3 crs)

An examination of Hitler's policy of genocide against the Jews of Europe. Includes related phenomena such as the roots of anti-Semitism, fascist ideology, non-Jewish victims of the Nazis, Holocaust denial and other examples of genocide in recent world history such as Armenia, Rwanda and Bosnia.

### HIS 220 (WST 220) Women in History (3 crs)

A study of women in Western society from antiquity to the present. The course will examine principal events, trends and ideas affecting women in selected periods, including the Icelandic Society, the Troubadour civilization, the 17th century salon ladies and the feminist and suffrage movements of the 19th and 20th centuries. Prerequisite: completed history core.

### HIS 250 (POS 250) Revolution and Ideology (3 crs)

This course encourages students to come to terms with revolutionary ideas and thinkers in a number of ways. First, the instructor provides the historical background to the epochs when ideas such as Marxism and fascism appeared. Then students study revolutionary writings to analyze the writers' criticisms of society, suggested methods of change and ultimate goals.

### HIS 300 (INS 300) Modern Ireland (3 crs)

This course examines the major political and social developments in Irish history in the 19th and 20th centuries. In the 19th century, the focus is on the rise of Irish cultural and political nationalism, the nature of British rule in Ireland, the issues of land and famine and the role of religion in Irish culture and politics. In the 20th century, the focus shifts to the independence movement, partition, the parallel development of the Irish Republic and Northern Ireland and "Troubles" in Northern Ireland.

**HIS 310 (INS 310) Eastern Europe Since Napoleon (3 crs)**

The lands of Eastern Europe, such as Serbia, Slovenia and Poland, are examined in terms of their relationships with both Western Europe and Russia. The key processes of nation-building, industrialization and political modernization form the analytical framework of the course.

**HIS 320 Immigration, Ethnicity and the American Experience (3 crs)**

This course is an exploration of immigration, ethnicity and the American experience. Students will investigate topics ranging from ethnic group relations, economic and demographic trends, the significance of politics and religion, public policy and nativism.

**HIS 324 The Medieval World (3 crs)**

This course examines the social, political, religious, intellectual and artistic development of Medieval Civilization from the fall of Rome to the fifteenth century.

**HIS 331 (INS 331) Modern Russia (3 crs)**

A survey of the social, political and military challenges facing Russia as a great power from 1850 to the present. Topics include serfdom, industrialization, the Bolshevik Revolution, the Stalinist terror and the *glasnost* and *perestroika* of Gorbachev. Concludes with analysis of the prospects of Yeltsin's post-communist Russia.

**HIS 340, 341 History of England (3 crs ea)  
(HIS 341 available for credit as INS 341)**

A two-semester survey; part one studies England from the coming of the Anglo-Saxons to the end of the Wars of the Roses in 1485; part two deals with England from the reign of Henry VIII to the present.

**HIS 345 (INS 345) Modern France (3 crs)**

This course explores the development of Modern France from the Revolution of 1789 to the present. It examines the principal political, economic, intellectual and cultural developments of the period.

**HIS 351 The Western Tradition: Antiquity To Religious Reformation (3 crs)**

This course is a broad survey of Europe's political, social, economic and cultural traditions with a stress on selected problems viewed from conflicting historical interpretations. Students will make use of both primary and secondary literature and make oral and written reports on the problems they have studied. (only offered every other year)

**HIS 352 The Western Tradition from 1650 to the Present (3 crs)**

This course is a broad survey of European political, social, economic and cultural traditions and how those traditions have been spread throughout the world. Stress will be placed on selected problems viewed from conflicting historical interpretations. Students will use primary and secondary sources and make oral and written presentations on the problems they have studied. (only offered every other year)

**HIS 371-374 History Through Films (3 crs ea)**

This semester-length history seminar will use feature films on historical topics as focal points for discussion and lecture in various areas of history. The area chosen will depend on the instructor.

HIS 371: American History

HIS 372: Early European History

HIS 373: Modern European History

HIS 374: Non-Western History

**NON-WESTERN****HIS 219 East Asia: The Great Tradition (3 crs)**

This course treats the origins and development of East Asia until 1800, focusing on the religious and philosophical systems of Buddhism, Confucianism, Taoism and Shintoism. Consideration also of political traditions and social and cultural development.

**HIS 221 (INS 221) Japan Since 1800 (3 crs)**

Surveys Japan's native traditions, assimilation of Chinese and Western culture and transformation into an Asian political and economic power.

**HIS 222 (INS 222) China Since 1800 (3 crs)**

Covers China's development from the 19th century with emphasis on traditional institutions and beliefs and their transformation under Western influence.

**HIS 223 (INS 223) India and South Asia  
(Pakistan, Sri Lanka, Bangladesh, Nepal) (3 crs)**

A survey of the traditional cultures and institutions and the rise, development and consequences of Western imperialism in South Asia.

**HIS 224 (INS 224) Southeast Asia (3 crs)**

This course concentrates on the nature of traditional Southeast Asian societies arrayed between China and India before 1870, the seizure of these lands by Western imperialist nations from the 1870's into the mid-twentieth century when nationalists regained their independence and finally how well each country has done since independence. Forty percent of the course focuses on Vietnam.

**HIS 228 (POS 228 and INS 228) Latin America in 20th Century (3 crs)**

Chronological survey of Latin America from 1890 to the present. Stress will be on the development of Latin American nations, their problems and their relationships with the United States.

**HIS 336 (INS 336) Africa (3 crs)**

This course offers a survey of African history, with an emphasis on the rich diversity of its peoples and cultures, from antiquity through the pre-colonial, colonial and post-colonial periods. Topics that receive particular attention include civilization and state formation in pre-colonial rule on Africa, the Apartheid state of South Africa and the problems of civil war, military dictatorships, underdevelopment, famine and disease that have plagued independent Africa

**SEMINARS****HIS 384 Readings Seminars (3 crs)**

A combination of assigned readings, lectures and discussions; titles and content may change from semester to semester since they are designed by faculty members for the areas of their special interests.

**HIS 486 Senior Seminar (3 crs)**

Participants read on a common seminar topic, write and orally defend their research papers on an aspect of the topic.

# International Business

(See description of International Business major in the Business section, p. 34)

# International Studies

Director: Chris Scholl, Ph.D.

The International Studies major is both interdisciplinary and cross-cultural. The flexible nature of the program allows students to concentrate in one of two areas: the humanities or social sciences. The flexibility of this major allows students to pursue a second major (see pg. 16 of the catalog for information on double majors).

Upon completion of the International Studies program, students will:

1. Have a better understanding of contemporary global issues (e.g., environment, development, conflict, population, global economy).
2. Have an awareness of the cultural diversity within the world community.
3. Have a clear understanding of the political and economic relations among the countries of the world.

4. Place current global issues into proper historical context.
5. Have solid foundation in a foreign language of their choice.

## Requirements for International Studies Major Bachelor of Arts Degree

INS 111	World Community	(3 crs)
SSC 105	Social Science from a Global Persp.	(3 crs)
ECO 110	Macroeconomics	(3 crs)
POS 212	Global Politics	(3 crs)
RST 203	World Religions	(3 crs)
MOL	Two languages in addition to core	(6 crs)
SSC 488	Senior Thesis	(3 crs)
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		(24 crs)

Students majoring in international studies must concentrate on either humanities or the social sciences. In addition to the core, students must take five courses (15 crs) from their fields of concentration and two courses (6 crs) from the other. The courses selected must meet the approval of the director. In order for courses to qualify as an elective, they must be of a contemporary nature, and focus on at least one of the following three : 1) another culture, 2) relations among countries, 3) a global issue(s). A non-exhaustive list of such electives follows.

### Humanities

ENG 252	Border Crossings
FRE 210	Readings
FRE 220	Culture Through Communications
FRE 230	Conversation I/Conversation II

## INTERNATIONAL STUDIES - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
<b>FALL</b>	FYS 101	1	MOL	3	MOL	3	INS 484	3
	INS 111	3	LIT 250	3	RST 203	3	HIS/POS	6
	ECO 110	3	RST 106/107	3	PHI 205	3	INS Electives	6
	ENG 105 or 110	3	POS 212	3	INS Electives	6		
	MOL 102	3	Science	3	FAS 101	1		
	HIS 110	3						
	Semester total	16		15		16		15
<b>SPRING</b>	HIS 120	3	INS Elective	3	MOL	3	Electives	12
	LIT 120	3	MOL	3	INS Electives	6	Science	3
	MOL 111	3	PHI 105	3	RST/PHI 305	3		
	MAT	3	SSC 110	6	FAS 20x	2		
	INS Elective	3	POS 211	1				
		Semester total	15		15		14	
	Total Credits	31		30		30		30 121

FRE 320	French Civilization and Culture
HIS 217	History of the Holocaust
HIS 221	Japan since 1800
HIS 222	China since 1800
HIS 223	India and South Asia
HIS 224	Southeast Asia
HIS 250	Revolution and Ideology
HIS 300	Modern Ireland
HIS 310	Eastern Europe Since Napoleon
HIS 316	The Rise of the US as a World Power
HIS 331	Modern Russia
HIS 336	Africa
HIS 341	History of England II
HIS 345	Modern France
INS 210	Mexico Experience
PHI 225	Eastern Patterns of Thought
POS 228	Latin America in the 20th Century
PWR 261	Crosscultural Communication
SPA 210	Readings
SPA 220	Culture Through Communications
SPA 230	Conversation I/Conversation II
SPA 320	Hispanic Civilization and Culture
SPA 321	Survey of Peninsular Spanish Literature
SPA 322	Survey of Spanish American Literature
SPA 330	Advanced Conversation
SPA 350	Special Topics

### Social Sciences

CRJ 327	Comparative Systems of Justice and Social Control
ECO 318	International Economics
MGT 311	International Business
MKT 315	International Marketing
POS 211	Comparative Politics
POS 228	Latin America in the 20th Century
POS 250	Revolution and Ideology
POS 311	War and Peace: Philosophical and Political Issues
POS 333	Global Political Economy
POS 334	International Organization
POS 341	Global Issues
POS 350	Environmental Law and Politics
PSY 235	Human Sexuality in a Diverse World
PSY 425	Psychology of Gender

**Special Note:** The international studies faculty believe that the study abroad experience is extremely beneficial. Therefore, those majoring in international studies are strongly encouraged to study abroad.

Rationale: In an increasingly global world, this minor is designed to give students the opportunity to incorporate international studies into their coursework.

### Requirements for International Studies Minor Bachelor of Arts Degree

INS 111	World Community	(3 crs)
POS 212	Global Politics	(3 crs)

In addition to the International Studies core, students minoring in international studies must take five additional courses (15 crs) which meet with the approval of the director.

## Course Descriptions

### INS 111 World Community (3 crs)

An introduction to the global environment. Topics include world geography, comparative cultures, international conflict and economic interdependence.

### INS 210 Mexico Experience (3 crs)

Introduction to the rich culture of the Mexican people, and their history, politics and economics. Topics include Mexican art and music, overpopulation, abject poverty, environmental degradation and a large informal economic sector. Historical landmarks, museums, markets and archeological sites will be visited.

### Wheeling Jesuit University Study Abroad and Washington Policy

The following criteria apply to all students who wish to study abroad\* or participate in one of the Washington D. C., programs:

1. Students must register through Wheeling Jesuit University.
2. Students will pay the cost of the host program. Payment will be made through Wheeling Jesuit University.
3. Students must consult with Wheeling Jesuit financial aid officers concerning the cost of the program well in advance of the semester in which they plan to study overseas or in Washington.
4. Students must consult with their advisor or department chair concerning their proposed course of study at the host institution.
5. Students must pay a \$500 administrative fee to Wheeling Jesuit University (this will be calculated in the students financial aid package).

\*This policy does not apply to the Jesuit Program in Beijing, China

# Stephen J. Laut, S.J., Honors Program

Director: *Leslie Liedel, Ph.D.*

The Stephen J. Laut, S.J., Honors Program is intended for students with a record of exceptional academic achievement and the desire to participate in a program of greater academic challenge. The aim of the program is to give talented and motivated students the encouragement for intellectual exploration in the company of fellow Laut Scholars. In the context of a comprehensive liberal arts college, the role of the honors program is to introduce students to aspects of the arts and sciences that are not available in the regular curriculum. Awakening curiosity and offering new experiences are central to its purpose. Students who successfully complete honors requirements are recognized at graduation and receive a diploma attesting to this distinction.

## Requirements

1. Students fulfill requirements as indicated by core and major.
2. Freshmen honor students participate in a 2 credit seminar that introduces them to the Laut Honors Program and its mission through a guided project. All upperclass honor students take a 3 credit seminar. These seminars, arranged in a flexible curriculum, are designed to be interdisciplinary, multimedia and project-oriented.
3. Each of the honors seminars is guided by a faculty member who provides for speakers, readings and special trips. Seminars meet once biweekly and are graded Cr/NCr. A Laut scholar in good standing has met the attendance and participation requirements of the Honors Seminar. Though the seminars are graded Cr/NCr, Laut Scholars must maintain a minimum cumulative grade point average of 3.3. Students with deficient grades may petition for a probation year. Students are also expected to preregister for seminars and to maintain an uninterrupted registration in the Honors Program.

## Admission

All students who participate in the Laut Competitive Scholarship are automatically asked to seek admission in the Honors Program. Interested first year students who did not participate in the Competitive Scholarship, but who meet the criteria of that scholarship competition, are also welcome to submit an application. At the end of the first year, Laut Scholars must have a minimum of a 3.3 and submit an application to join the Laut Honors Program. Students with at least a 3.0 may petition to participate in the program on probation. Interested sophomore students who were not part of the first-year Laut program but who at the end of their freshmen year have earned a 3.3 may also apply to join the program. All applications are due in the beginning of the second year and are available from the program director.

# Liberal Studies

Contact Persons: *H. Lawrence Jones, Ed.D. (Chair)*  
*Christina Sampson, M.A.*  
*Mary Taylor, Ed.D.*  
*Lucy Young, Ph.D.*

The Liberal Studies in Elementary Education degree is part of the Teacher Preparation Program, which is a Candidate Member in Good Standing of the national accrediting body of the Teacher Education Accreditation Council. The Liberal Studies major is the heart of the rigorous K-6 Multi-Subjects licensure program. Students in this major complete a concentration in elementary education. A strong emphasis on content with supporting pedagogy and extensive technology integration are hallmarks of the major. Students, with the help of the advisor, should complete a four-year plan during the freshman year. To complete program requirements within eight semesters, students must maintain sixteen to eighteen credit hours per semester beginning with the freshman year. General guidelines and course descriptions for the professional education component are outlined in the Teacher Preparation Program section.

PSY 110, GSC 110 and 120, science with lab experience, and SSC 105 should be taken as these courses are required for recommendation for K-6 Multi-Subjects licensure. PSY 110 and SSC 105 are also core-fulfilling.

## Requirements for the Liberal Studies Major with an Elementary Education Concentration:

A distribution of courses beyond the core curriculum that includes:

### Language elective

from ENG, LIT, PWR, SPA, FRE, GER, or TPP 316 (NOTE: TPP 316 may be required based on program recommendations)

### Mathematics elective

**HIS 211 or 212**

**HIS 214**

**POS 110**

**GSC 110 and 120**

**Science Lab**

### General electives (6 credits) from::

history, social science, mathematics, science, English or modern language

### Elementary Education Concentration:

PSY 214	TPP 324 C/L	TPP 441	TPP 231 C/L	PSY 220
TPP 210	TPP 325	TPP 473	TPP 232 C/L	
TPP 223	TPP 327*	TPP 475	TPP 333 C/L	
TPP 322 C/L	TPP 341	TPP 481	TPP 334	

**\*Note:** Upon program recommendation, some students may be advised to complete specific Wellness Programs to supplement the fine arts experiences.

### LIBERAL STUDIES with Elementary Education Concentration Typical Sequence:

FRESHMAN		SOPHOMORE	
HIS	110	TPP	231 C/L
ENG	105/110	TPP	210
Math		PSY	214
RST	106/107	GSC	110
MOL	101/102	SSC	105
FYS		HIS	214*
		MOL	111
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HIS	120	TPP	232 C/L
MOL	102/111	PSY	220
Science		LIT	120
POS	110	GSC	120
PSY	110	RST	200/300 level
PHI	105		
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JUNIOR		SENIOR	
TPP	322* C/L	TPP	473*
TPP	324* C/L	TPP	476
TPP	334 C/L	TPP	441*
Math	Elective*	Ethics	
LIT	250	General Elective*	
TPP	327*	Language Elective*	
		General Elective*	
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TPP	323*	TPP	481
TPP	341*	TPP	475
TPP	333 C/L		
PHI	205		
TPP	325*		
TPP	223*		
HIS	211/212		

\* denotes a requirement of the Liberal Studies with Elementary Education Concentration major.

**Note:** During the student teaching experience, students will enroll in TPP 475 and TPP 481. Additional courses, participation in athletics and employment are strongly discouraged during this semester.

## Course Descriptions

### TPP 223 Integrated Curriculum Development and Methods: Physical Education, Health and Safety (2 cr. / fall only)

Hands-on examination of physical and emotional fitness, contemporary health issues, and the integration of physical education, health, and safety in multi-subject K-6 classrooms. Prerequisite: junior standing.

### TPP 316 Grammar (2 cr.)

Advanced study of grammar content and instructional strategies. Required of all 5-12 SLD endorsements and English license applicants. Strongly recommended for all K-6 Multi-Subjects applicants. Prerequisite: LIT 120

### TPP 322C Excursions in Literacy: Teaching Reading in the Elementary School (3 cr. / fall only)

Introduction to the foundation skills of reading instruction that prepares students to teach learners to acquire knowledge and construct meaning. Theories and strategies are grounded in field experiences with emphasis on techniques for thematic teaching of reading/language arts. Prerequisite: junior standing. Corequisite: TPP 322L

### TPP 322L Excursions in Literacy: Teaching Reading in the Elementary School (1 cr. / fall only)

Observation and teaching experience under the guidance of the master teacher and university supervisor. Focus on teaching practice in reading and language arts. Corequisite: TPP 322C.

### TPP 323 Integrated Curriculum Development and Methods: Art through Children's Literature (2 cr. /spring only)

Integrated, theoretical and hands-on experience designed to prepare a student to work in a multi-subject K-6 classroom. Application of visual art by drawing examples from and parallels to children's literature and the theories of each. Projects integrate visual arts into all content areas. Field experience is part of the junior year full-day placements. Prerequisite: junior standing.

### TPP 324C Integrated Curriculum Development and Methods: Mathematics and Science (3 cr. / fall only)

Study of methods for teaching K-6 mathematics and science curriculum consistent with national and state standards, using a thematic approach with literature connections, and focusing on developmentally appropriate strategies. Prerequisite: junior standing. Corequisite: TPP 324F.

### TPP 324L Integrated Curriculum Development and Methods: Mathematics and Science (1 cr. / fall only)

Observation and teaching experience under the guidance of the master teacher and university supervisor. Focus on teaching practice in mathematics. Corequisite: TPP 324C.

### TPP 325 Diagnosis and Correction: Mathematics (2 cr.)

Advanced strategies to support teaching to foster K-6 students' mastery of mathematical concepts and skills through multiple representations of concepts, remediation to correct misconceptions or gaps in knowledge, and error analysis. Prerequisite: TPP 324.

### TPP 327 Integrated Curriculum Development and Methods: Music for Elementary Teachers (2 cr. /fall only)

Integrated, hands-on study of music and theory with parallels to the arts through a diverse selection of cultures designed to prepare the student to work in a multi-subject K-6 classroom. Field experience is part of the junior year full-day placements. Prerequisite: junior standing.

### TPP 333C Exceptionalities and Diversity (2 cr.)

Overview of the characteristics and needs of exceptional and diverse learners and curricular and instructional alternatives that address these needs. Legislation and litigation affecting this population will also be discussed. Prerequisite: TPP 334. Corequisite: TPP 333L.

### TPP 333L Exceptionalities and Diversity (1 cr.)

Observation and teaching experience under the guidance of the master teacher and university supervisor in inclusive and pull-out classrooms. Corequisite: TPP 333C.

**TPP 341 Integrated Curriculum Development and Methods: Language Arts and Social Studies (3 cr. / spring only)**

Study of language arts and social studies curriculum incorporating specific methods to prepare students to integrate language arts into K-6 content areas. Field experience is part of the junior year full-day placements. Prerequisite: TPP 322.

**TPP 441 Diagnosis and Correction: Reading and Language Arts (2 cr. )**

Lab-based extension of the assessment/instruction process through construction, administration, and interpretation of authentic reading and written language assessments; planning, teaching, and evaluating lessons that incorporate the instructional strategies acquired and practiced during class time. Prerequisite: TPP 322.

**TPP 473 Elementary Internship (2 cr.)**

Capstone activity where the students work with elementary-aged children in a community-based setting, develop action research projects, prepare and present a summary of research-related activities and results. The internship should be completed during the senior year in the semester opposite student teaching. Prerequisite: junior or senior standing.

**Note:** Wheeling Jesuit University’s Teacher Preparation Program functions under approval provided by the West Virginia Department of Education. Course descriptions, credit hours or requirements may be revised based upon state requirements.

# Mathematics

Contact Persons: *Theodore Erickson, Ph.D. (Chair)*

*John Karwin, S.J.*

*Vasile Lauric, Ph.D.*

*Onkar Pandit*

*Kimberly Roth, Ph.D.*

The essence of orderliness, form and elegance, mathematics is a basic tool for many disciplines and careers. The mathematics curriculum is designed to provide the student with a strong mathematics background enhanced by technological tools, such as the graphing calculator and symbolic algebra software. It also is flexible enough to accommodate the diverse interests of mathematics majors, including those preparing for graduate work, those preparing to become an actuary and those seeking to teach on the elementary or secondary level.

Upon completion of the Mathematics program, students will be able to:

1. Comprehend and simplify mathematical expressions.
2. Build or solve mathematical models.
3. Prove or disprove a theory with logical steps.
4. Understand and use modern technology in mathematics.
5. Pursue high level mathematical theory.

## Core Fulfilling Courses

### Mathematics Requirement 1 course

CSC 108	Introduction to Structured Programming	(3 crs)
CSC 110	Computer Science I	(4 crs)
MAT 102	Math in Society	(3 crs)
MAT 105	Introduction to Statistics I	(3 crs)
MAT 108	Pre-Calculus	(3 crs)
MAT 111	Calculus I	(4 crs)

(A student with advanced placement may substitute a higher level MAT or CSC course to fulfill the core requirement.)

### Requirements for Mathematics Major Bachelor of Science Degree

In addition to completing the core curriculum requirements, outlined on pg. 14-15 of this catalog, (plus 6 more already included in courses below,) all majors in mathematics must complete the following courses:

MAT 111, 112	Calculus I, II	(8 crs)
MAT 211	Calculus III	(4 crs)
MAT 212	Ordinary Differential Equations	(3 crs)
MAT 235	Discrete Mathematics	(4 crs)
MAT 240	Linear Algebra	(4 crs)
MAT 351 or 352	Introduction to Abstract Algebra	(3 crs)
MAT 411, 412	Introduction to Real Variables I, II	(6 crs)
MAT 482	Senior Seminar in Mathematics	(2 crs)
MAT 110	Electives (three courses to be chosen from: MAT 331, MAT 335, MAT 413, MAT 422, MAT 424, MAT 431, MAT 310, MAT 336, MAT 352)	(9 crs)
PHY 110, 121	Physics I and Lab I	(5 crs)
MAT, PHY, CSC	Electives (two other courses from MAT, PHY or CSC)	(6 crs)
		<hr style="width: 100%; border: 0.5px solid black;"/>
		(51 crs)

### Requirements for Certification in Math Education

The student wishing to pursue certification for teaching mathematics in the intermediate and/or secondary schools should consult the director of the teacher preparation program for specific requirements. Generally, the student completes the mathematics major as described above with the upper-level electives being specified as MAT 424 and MAT 335. PSY 110 should be taken as early as possible.

### Requirements for Mathematics Minor

Mathematics minors must complete a minimum total of 15 credit hours in mathematics beyond MAT 112.

# Course Descriptions

## DEVELOPMENTAL MATHEMATICS:

These courses are preparatory and will not satisfy the University's core curriculum requirement in mathematics. They are offered as parallel semester courses each academic year so that students with deficient background in mathematics will be prepared to successfully complete the core requirement in mathematics. Students with weaker backgrounds in mathematics should take MAT 090 while students with fewer deficiencies should take MAT 092. The algebra background in either of these courses is a prerequisite for every other course in mathematics or computer science. Students can not take both of these courses for credit since MAT 090 includes the content of MAT 092.

### MAT 090 Developmental Mathematics (4 crs)

A review of arithmetic operations, variable expressions, translation, polynomials, exponents, factoring, rational expressions, first degree equations, inequalities, radical expressions and quadratic equations. This course also requires a weekly one-hour lab session.

### MAT 092 Developmental Mathematics II (2 crs)

A study of intermediate algebra including rational expressions, linear equations in two variables, systems of equations, radical expressions and quadratic equations.

## COLLEGE LEVEL MATHEMATICS:

The following courses carry a minimum prerequisite of the above two courses or the equivalent. Any of these, except MAT 110, can satisfy the mathematics core requirement provided the necessary prerequisites are met by the student. Those typically taken as such are marked "core."

### MAT 102 Math in Society (3 crs) (core)

This course is designed to meet the needs of students who do not have a specific course needed for support of their major. The fundamental properties of numbers, geometry and statistics are covered through the collection of modern and useful applications of mathematics. The course contains a collection of topics of modern society: Social Choice, Management Science, Growth and Symmetry and Statistics.

### MAT 105 Introduction to Statistics I (3 crs) (core)

Descriptive statistics including measures of central tendency and variability, graphic representation, probability, the binomial, normal and T distributions, hypothesis testing and linear regression.

### MAT 106 Introduction to Statistics II (3 crs)

Descriptive statistics continued, including hypothesis testing of the mean and proportion (two populations), analysis of variance (ANOVA), goodness of fit (chi-square distribution), multiple regression and non-parametric methods. Prerequisite: MAT 105

### MAT 108 Pre-Calculus (3 crs) (core)

A thorough preparation for calculus with analytic geometry, including conic sections, and the transcendental functions: logarithmic, exponential and trigonometric functions.

## MATH - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	ENG 105 or 110	3	MAT 211	4	MAT 351/352	3	MAT 412	3
	HIS 110	3	MAT 235	4	MAT 335/331	3	MAT 331/335	3
	MAT 111	4	PHY 110	4	Global Persp.	3	MAT 482	2
	FYS 101	1	PHY 121	1	RST/PHI 305	3	Electives	6
	MOL	3	RST 106/107	3	Science	3	FAS Elective	1
	PHI 105	3			FAS 101	1		
	Semester total	17		16		16		15
SPRING	MAT 112	4	LIT 250	3	MAT 411	3	MAT Electives	6
	LIT 120	3	MAT 212	3	MAT 336/424	3	Electives	9
	HIS 120	3	MAT 240	4	MAT 310/413	3		
	MOL	3	RST 20x	3	Electives	6		
	PSY 110	3	PHI 205	3	FAS Elective	1		
		Semester total	16		16		16	
	Total Credits	33		32		32		30 127

**MAT 110 Business Calculus (4 crs)**

A survey of the basic techniques of differential and integral calculus including polynomial, logarithmic and exponential functions. Applications to finance and economics. (Taught concurrently with MBA 495.) **Does not satisfy the core requirement in mathematics.**

**MAT 111 Calculus I (4 crs) (core)**

A theoretical introduction to differential calculus including limits, continuity, the basic rules for derivatives and applications including optimization problems. A brief introduction to integration leading to the Fundamental Theorem of Calculus completes this course. Prerequisite: MAT 108 or equivalent.

**MAT 112 Calculus II (4 crs)**

Transcendental functions, applications of integrals, volumes of revolution, surface areas; techniques of integration, including powers of trigonometric functions, integration by parts and by partial fractions, improper integrals, infinite series, Taylor's expansion and indeterminate forms. Prerequisite: MAT 111.

**MAT 211 Calculus III (4 crs)**

Vectors and vector valued functions, extreme of multivariate functions and the method of Lagrange multipliers, surfaces in three dimensions, line and surface integrals; multiple integration and Stokes Theorem. Prerequisite: MAT 112.

**MAT 212 Ordinary Differential Equations (3 crs)**

ODEs of first order: linear, homogeneous, separable and exact, with applications; orthogonal trajectories; those of second order: reducible to first order, general and particular solutions by the methods of undetermined coefficients, variations of parameters and power series; and an introduction to numerical methods. Prerequisite: MAT 112.

**MAT 222 Applied Calculus (4 crs)**

Survey of various topics in calculus including: simple and multiple integration, partial differentiation, infinite series and differential equations; with emphasis on applications. Prerequisite: MAT 111.

**MAT 235 Discrete Mathematics (4 crs)**

Sets and relations, logic and truth tables, Boolean algebra, logic gates, graph theory, combinatorics, algorithms, matrix algebra and determinants. Prerequisites: MAT 108.

**MAT 240 Linear Algebra (4 crs)**

Solution spaces for systems of linear equations, elementary row operations, vector spaces, linear independence, linear transformations, change of basis, inner products, projections, the Gram-Schmidt process, eigenvalues and eigenvectors. Prerequisite: MAT 211 or MAT 235.

**MAT 310 History of Mathematics (3 crs)**

History of the development of mathematical concepts in algebra, geometry, number theory, analytical geometry and calculus from ancient times through modern times. Theorems with historical significance will be studied as they relate to the development of modern mathematics. Prerequisite: MAT 112 or MAT 235

**MAT 331 Numerical Analysis (3 crs)**

Numerical solution of linear systems and of non-linear equations; interpolation, approximation and numerical differentiation and integration (computer methods and programming will be utilized.) Prerequisite: MAT 112.

**MAT 335 Applied Probability and Statistics I (3 crs)**

Introduction to Probability: discrete and continuous random variables (binomial, geometric, hypergeometric, Poisson, normal, exponential, Chi-square, gamma), sampling distribution (including CLT), multivariate distributions, stochastic processes. Prerequisite: MAT 211

**MAT 336 Applied Probability and Statistics II (3 crs)**

Introduction to mathematical statistics: elimination and inferences for means (confidence intervals and tests of significance), differences of two means, proportions, differences of two proportions and variances; linear models (simple and multi-variable), nonparametric methods. Prerequisite: MAT 335

**MAT 351 Introduction to Abstract Algebra: Rings (3 crs)**

Introduction to rings, integral domains; ideals and factor rings; homomorphisms and isomorphisms; polynomial rings, unique factorization, irreducible polynomials; extension fields, algebraic extensions, finite fields; geometric constructibility. Prerequisite: MAT 240

**MAT 352 Introduction to Abstract Algebra: Groups (3 crs)**

Introduction to groups: finite groups and subgroups, cyclic groups, permutation groups, homomorphisms and isomorphisms, cosets and Lagrange's theorem, direct products of homomorphisms. Prerequisite: MAT 240

**MAT 411 Introduction to Real Variables I (3 crs)**

Development of the real numbers; topology of the real line; limits and limit points, continuity and the properties of continuous functions; convergence of sequences and series. Prerequisite: MAT 351 or 352.

**MAT 412 Introduction to Real Variables II (3 crs)**

Uniform continuity, sequences of functions, uniform convergence, differentiation, integration and measure and elementary functional analysis. Prerequisite: MAT 411.

**MAT 413 Introduction to Complex Variables (3 crs)**

Analytic functions; power series; complex integration and Cauchy's theorem; entire functions; analytic continuation. Prerequisite: MAT 211, 212.

**MAT 422 Topology (3 crs)**

An introduction to point set topology including topological spaces, connected spaces, compact spaces, metric spaces and separation axioms. Prerequisite: MAT 411.

**MAT 424 Geometry (3 crs)**

Euclid's Axioms, the parallel postulate, leading to non-Euclidean geometries, and an introduction to projective and affine geometries.

**MAT 431 Foundations of Mathematics (3 crs)**

The fundamental notions of a system of postulates, their consistency, independence and categoricity. Introduction to ordinal and cardinal numbers. Prerequisite: MAT 211.

**MAT 482 Senior Seminar in Mathematics (2 crs)**

Independent study of topics not usually covered in the MAT curriculum leading to a presentation of an elementary research or survey paper by the student under the direction of a professor. Required for all mathematics majors in the junior or senior year.