



INDIAN SPRINGS SCHOOL

Curriculum Guide
2022-2023 Edition

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GENERAL

1.1 ADMINISTRATION

Head of School, *Scott Schamberger*

Assistant Head of School for Academic Affairs, *Jonathan Gray PhD*

Dean of Faculty, *Weslie Wald*

Dean of Students, *Hunter Wolfe*

Director of College Advising, *Amelia Johnson*

1.2 DEPARTMENTS

Arts, *Clay Colvin, Chair*

Computer Science & Engineering, *William Belser '80, Chair*

English, *James Griffin, Chair*

History, *Kelly Jacobs, Chair*

Languages, *William Blackerby '05, Chair*

Mathematics, *Chris Mullinax, Chair*

Physical Education, *Brad Skiff, Chair*

Science, *Tessa Magnuson, Chair*

1.3 COMMITTEES WITH ACADEMIC RESPONSIBILITIES

Academics Committee, *Jonathan Gray and Weslie Wald, Chairs*

Clay Colvin

William Belser

James Griffin

Kelly Jacobs

William Blackerby

Chris Mullinax

Brad Skiff

Tessa Magnuson

Amelia Johnson

Jourdan Cunningham

Commissioners of Education

Student External Engagement Committee, *Chris Tetzlaff and Hazal Mohammed, Chairs*

1.4 FACULTY

D'Anthony Allen, English	Mac Lacasse PhD, Mathematics
Neil Barrett, English	Tessa Magnuson, Science
Jean Bassene, Languages	George Mange, Languages
William Belser, Computer Science & Engineering	Pedro Mayor, Languages
William Blackerby, Languages	Hazal Mohammed, Science
John Brunzell, Mathematics	Chris Mullinax, Mathematics
Athena Chang, Languages	Rebecca Neel, Mathematics
Renee Chow PhD, English	Dane Peterson, Arts
Dan Clinkman PhD, History	Justin Pino, Physical Education
Clay Colvin, Arts	Michael Sheehan, Arts
Bob Cooper PhD, History	Jeffrey Sides PhD, Science
Colin Davis PhD, History	Brad Skiff, Physical Education
Emanual Ellinas, Arts	Chris Tetzlaff, Science
Jim Flaniken, Mathematics	Stephanie Thomas, Mathematics
Jonathan Gray PhD, Mathematics	Greg Van Horn, Physical Education
James Griffin, English	Lauren Wainwright JD, History
Jonathan Horn PhD, Languages	Weslie Wald, Languages
Leslie Hurt, Science	Hunter Wolfe, History
Kelly Jacobs, History	Cal Woodruff, English
Hye Sook Jung PhD, Arts	Lee Wright PhD, Arts

1.5 GRADUATION REQUIREMENTS

Department	Credits	Comments
Arts	1 credit	0.5 credits in Art History or Music History 0.5 credits in Arts
English	4 credits	At least one credit per year in grades 9-11
History	3 credits	1 credit of World History: To 1500 1 credit of AP World History or AP European History 1 credit of AP United States History
Languages	3 credits	Must be in same language
Mathematics	3 credits	Must include 1 credit at Algebra II level or higher
Physical Education	3 credits	0.5 credits WellFit and 0.5 credits 9th grade PE 1.0 credit in each of 10th grade PE and 11th grade PE
Science	3 credits	Must complete 1 credit in each of Biology, Chemistry, and Physics
Any	3 credits	

1.6 COURSE ENROLLMENT REQUIREMENTS

In general, students are required to enroll in seven, six, and five (Grades 8, 9-11, and 12, resp.) courses per semester.¹ At least four core subjects (English, History, Languages, Mathematics, Science) must be represented each semester; an MSON course or Independent Study cannot be used to reach the minimum course enrollment for a semester and will necessarily be the seventh (11th grade) or sixth (12th grade) course. Any deviation from the indicated enrollments must be approved by the Assistant Head of School for Academic Affairs.

To enroll in seven or more courses in grades 9-12, an Academic Overload form must be submitted to the Academics Committee for approval. Similarly, if a student wishes to enroll in two or more courses in a core subject, the corresponding form must be submitted to the Academics Committee for approval.

Grade 8

Students in 8th grade are required to enroll in

1. Art 8
2. English 8
3. 8th Grade Social Studies
4. A Chinese, French, Latin, or Spanish course

¹ 10th and 11th Grade PE are not used in enrollment counts.

5. A mathematics course
6. PE 8
7. Science 8

Grade 9

Students in 9th grade are required to enroll in

1. English 9
2. World History: To 1500
3. A Chinese, French, Latin, or Spanish course
4. A mathematics course
5. WellFit and PE 9
6. Biology

Grade 10

Students in 10th grade are required to enroll in

1. Critical Reading & Analytical Writing
2. AP World History or AP European History
3. A Chinese, French, Latin, or Spanish course
4. A mathematics course
5. Art History or Music History
6. Chemistry
7. 10th Grade PE

An additional semester elective must be chosen to complement Art History or Music History thereby bringing the total course enrollments to six per semester (not including PE).

Grade 11

Students in 11th grade are required to enroll in

1. AP English Language or Two English Electives
2. AP United States History
3. A Chinese, French, Latin, or Spanish course
4. A mathematics course
5. 11th Grade PE

Additional courses must be chosen to bring the total course enrollments to six courses per semester (not including PE).

Grade 12

Students in 12th grade are required to enroll in AP English Language or Two English Electives. Additional courses must be chosen to bring the total course enrollments to five courses and at least four core subjects (English, History, Languages, Mathematics, Science) are represented each semester.

1.7 GRADING SCALE AND GPA

A student's grade point average (GPA) is calculated at the end of each year to reflect our cumulative grading model. Year and cumulative GPAs are recorded on the transcript each year. Independent Studies, MSON courses, 10th Grade PE, and 11th Grade PE are not included in GPA calculations.²

Starting in the Class of 2024, the GPA calculation was changed to an unweighted 4.0 system wherein the quality points earned are jointly proportional to the numerical grade earned in the course and the grade point credits for the course. E.g., if a student earns a grade of 87 in a 1.0 course, then the quality points earned are $0.87 \cdot 4.0 \cdot 1.0 = 3.48$. A more comprehensive example follows:

Course	Grade	Quality Points Possible	Quality Points Earned
English 9	91	1.0	$0.91 = 0.91 \cdot 1.0$
World History: To 1500	86	1.0	$0.86 = 0.86 \cdot 1.0$
Latin II	94	1.0	$0.94 = 0.94 \cdot 1.0$
Adv Geometry	82	1.0	$0.82 = 0.82 \cdot 1.0$
WellFit	90	0.5	$0.45 = 0.90 \cdot 0.5$
PE 9	100	0.0	$0.00 = 1.00 \cdot 0.0$
Biology	78	1.0	$0.78 = 0.78 \cdot 1.0$
Sum Total		5.5	4.76

The GPA earned for this year would then be $(4.76/5.5) \cdot 4.0 = 3.46$. In general, let p_1, p_2, \dots, p_k be the quality points possible for the respective courses wherein a particular student earned grades g_1, g_2, \dots, g_k . The GPA corresponding to these k courses can be calculated by³

$$GPA = 4.0 \times \frac{\sum_{i=1}^k g_i \cdot q_i}{\sum_{i=1}^k q_i}$$

Note: While not reflected on transcripts, faculty may use the following grade translation table between numerical and letter grades:

97	93	90	87	83	80	77	73	70	67	63	60	0
A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

1.8 ACADEMIC POLICIES

- GPAs recorded on the transcript include only coursework completed at Indian Springs. Because grading scales and course requirements vary from school to school, we do not print courses taken at other schools on our transcript nor do we include them in the GPA. When the student applies to college, any transcripts from other schools

² For calculation purposes, these courses have 0.0 quality points possible.

³ Equivalently, one can take the dot product of the Q and G vectors, divide the latter result by Q in ℓ_1 norm, and then multiply by 4.

recording grades from 9th grade and above are sent alongside the Indian Springs transcript.

2 | ARTS

2.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN ARTS, WILL ...

- Demonstrate a command of content specific to their media of study.
- Demonstrate an appreciation for the acquisition of new content, knowledge, skills, and understanding, and be able to apply a methodical approach to acquire such.
- Demonstrate an understanding of various efficient practice/rehearsal techniques.
- Demonstrate practical studio safety, time-management, and self-discipline skills.
- Understand the process of audition, rehearsal, and performance.
- See the value in a positive studio and rehearsal environment, and understand how to make positive contributions
- Understand, demonstrate, and appreciate the skill of communication in all forums.
- Realize the value of the arts in the formation and communication of ideas.
- Understand the need for collaboration and mutual respect in ensemble projects.
- Recognize the value of empathy in collaborative and performative activities.
- Value perseverance and follow-through in individual and group activities.
- Develop appreciation of positive leadership skills in their particular artistic medium.
- Acquire an inner compulsion to express themselves in a creative, not imitative, form.
- Develop a healthy appreciation of self, peer, and professional critiques and reviews.
- Value/respect their own perspective and aesthetic and learn to value/respect the perspective and aesthetic of others.
- Understand and possess visual/musical/drama literacy, allowing them to effectively navigate the contemporary experience.
- Think critically about theatrical, visual, and aural information when it is presented and will be conscious of their theatric, visual, and aural culture output.
- Self reflect/empathize/identify with or draw personal contrast with historical voices, styles and periods.
- Develop an intellectual understanding of art concepts and a vocabulary to describe, analyze, compare, and judge works of art in various media and traditions.
- Become critically-thinking, motivated, disciplined, passionate, ethical, respectful, empathetic and courageous young artists prepared for a global society.

2.2 COURSE DESCRIPTIONS

3

COMPUTER SCIENCE & ENGINEERING

3.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN COMPUTER SCIENCE & ENGINEERING, WILL ...

- Learn that solutions to problems, either engineering or programming, are best solved by following a process. While the exact steps can vary from model to model, there is a commonality among all of the procedures.
 - Engineering problems are best solved with an iterative design cycle that moves through research, decomposition, modeling, implementation, measuring and testing, communicating results, and back to research.
 - Programming problems are best solved with Computational Thinking that decomposes problems, recognizes patterns, abstracts the rules for those patterns, and then produces algorithms.
- Know how to learn. A graduate will understand the skills and steps needed to learn, discover, and master new information on their own.
- Be able to seek knowledgeable assistance correctly. A graduate will understand how, when, and where to get assistance from knowledgeable people.
- Be able to communicate and teach what they know. A graduate will understand how to easily transfer knowledge and skills.
- Know the four pillars of Object Oriented Programming (OOP); Abstraction, Encapsulation, Inheritance, Polymorphism.
- Know fundamental programming concepts outside of OOP, such as
 - Data types and data collections; how to access them and what their limitations are.
 - How to make decisions with relational, logical, and control operators.
 - Big O: a representation of the time and space complexity of algorithms as they scale.
 - Recursion
 - Top Down Design / Bottom Up Implementation
- Understand how a team efficiently approaches learning about and mastering a topic or area of expertise. A graduate will understand how to manage time and resources for a project.
- Learn the basic fundamentals of Artificial Intelligence / Neural Networks / Machine Learning

- Be able to document their work. A graduate will understand the skills and steps needed to create and maintain Engineering, Technical, and Code Repository documentation.
- Be proficient at managing code in a team software repository and presenting code in a public code repository
- Be proficient enough with Linux to be more than exceeding comfortable using it in a college environment. A graduate will be conversant enough to accomplish basic programming, data management, and data analysis.

3.2 COURSE DESCRIPTIONS

4 | ENGLISH

4.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN ENGLISH, WILL . . .

- Understand and interpret visual texts (cartoons, sculpture, etc.).
- Craft a visual response to texts that demonstrates understanding of the texts rhetorical purpose.
- Demonstrate guided mastery of database use.
- Demonstrate mastery of close reading of texts.
- Demonstrate mastery of parts of speech and how they are used.
- Understand and adjust arguments for a variety of audiences.
- Master reference text usage (Dictionaries, Encyclopedias, Journals, etc.).
- Demonstrate mastery of modes of writing.
- Exhibit understanding of textual context including, but not limited to culture, history of composition, history of the book/genre/form, biography of the author.
- Master MLA citation form.
- Be competent in assessing appropriateness of secondary sources.
- Understand that reading, writing and thinking are concurrent processes.
- Be able to “read” situations, as well as poems or short stories, and be able to “confirm” the “text” (discuss its purpose, tone, significance, argument, etc.) and “complicate” the “text” (question the authors assumptions and linguistic/ rhetorical choices).
- Communicate well to a variety of audiences.
- Be independent, lifelong readers.
- Be able to make a cogent, cohesive argument based on textual evidence.
- Be able to research independently.
- Be able to edit his or her own and others writing.
- Recognize logical fallacies.
- Have used personal essays as a vehicle for self-reflection.

- Analyze and be able to criticize the authors “purpose” with appropriate objectivity.
- Write with subtlety and finesse.
- Understand plagiarism and intellectual dishonesty.

4.2 COURSE DESCRIPTIONS

5 | HISTORY

5.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN HISTORY, WILL . . .

- Be prepared for a future of lifelong learning and active, responsible global citizenship.
 - Recognize that individuals are agents of historical change and that an individual today can be an engaged and informed citizen who affects change in the world.
 - Understand the differences between major forms of political, economic, and social organization across times and places
 - Theorize and practice the fundamentals of individual and group self-governance
 - Have developed strategies to maximize their own learning strengths, including digital and civic literacy necessary to navigate the modern world of information and mis/disinformation
- Possess an historical perspective of who they are, why the world is the way it is, and how the past systemically influences the present.
- Grasp the interconnectedness of geography, politics, economics, social conditions, and ideas; the role of power in each; and the impact of each on the human experience.
 - Think critically, including:
 - Assimilate and synthesize large amounts of information,
 - Evaluate the credibility and limitations of evidence and arguments
 - Construct and defend theories of the human condition, such as political theory, social theory, and theory of mind
 - Analyze and interpret historical documents
 - Problem solving.
- Think historically about relationships/connections (comparison, causation, contextual) in the human experience.
 - Think chronologically and explain continuity and change.
 - Be able to draw comparisons between time periods and regions in order to identify transcending themes.
 - Be able to analyze cause and effect, including multiple causation, and to challenge arguments of inevitability.

- Be able to compare and contrast competing historical narratives and evaluate major debates among historians.
- Communicate effectively, including reading comprehension, writing, speaking, and listening.
 - Be able to create and support contestable thesis statements
 - Be able to structure and support logical argument.
 - Be able to interpret and deconstruct the arguments of others
- Be able to conduct effective research.
 - Be comfortable with independent learning.
 - Be able to formulate historical questions.
 - Be able to obtain and evaluate data (both primary and secondary sources), consider gaps in what we know, and use data to support an argument.
 - Understand the difference between one's own original thought and someone else's.
 - Be competent with MLA and Chicago styles.
- Be sensitive to bias and understand that the present influences our understanding and interpretation of the past.
 - Be able to distinguish between different forms of bias and understand how points of view shape people's interpretations of events and ideas

5.2 COURSE DESCRIPTIONS

6 | LANGUAGES

6.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN LANGUAGES, WILL . . .

- Engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.
- Understand and interpret written and spoken language on a variety of topics.
- Demonstrate an understanding of the relationship between the products and perspectives of the culture studied.
- Reinforce and further their knowledge of other disciplines through the target language.
- Acquire information and recognize the distinctive viewpoints that are only available through the target language and its cultures.
- Demonstrate familiarity with the history of the cultures studied and key literary works and authors in those cultures.
- Present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.
- Demonstrate an understanding of the nature of language through comparisons of the language studied and their own.
- Demonstrate an understanding of the concept of culture through comparisons of the cultures studied and their own.
- Use the language both within and beyond the school setting.
- Show evidence of becoming a life-long learner by using the language for personal enjoyment and enrichment.

6.2 COURSE DESCRIPTIONS

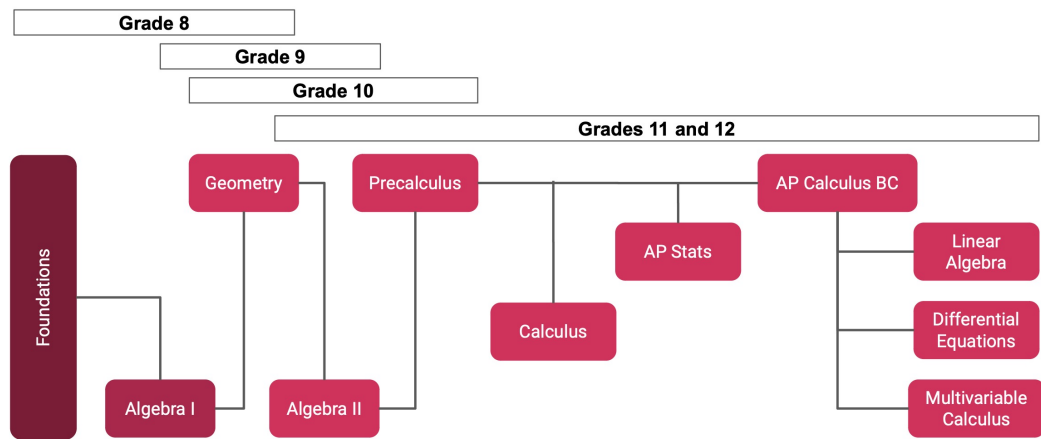
7 | MATHEMATICS

7.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN MATHEMATICS, WILL ...

- Perform elementary calculations and apply mathematical processes comfortably.
- Need to understand the whys and hows of mathematics.
- Communicate efficiently, accurately, and clearly in writing and speech.
- Form logical, coherent arguments and judge the validity of others arguments.
- Apply concepts and techniques from elementary mathematics to the world around them.
- Use prior understandings to inform and strengthen new concepts.
- Understand the importance of initial steps, that failure is a part of learning, and that growth is afforded by persistence.
- Appreciate the ubiquity of mathematics in the world around them.
- Guide personal decisions by specifying assumptions/non-negotiables and then make inferences based on these.
- Apply mathematics to the sciences to form inferences and support the Scientific Method.
- Apply the language of mathematics to the sciences to form inferences and support the Scientific Method.
- Connect the numerical, algebraic, graphical, and verbal perspectives of mathematics.
- Determine the appropriate structure or mathematical model so that one may
 - Apply knowledge and skills to ...
 - Solve known and novel problems and ...
 - Interpret the results or outcomes from the structure or model
- Collaborate and employ team-based approaches to explore concepts and solve problems.
- Use the appropriate technological tool for the problem at hand.
- Use statistics to become an educated citizen of our modern, data-driven world.

7.2 VERTICAL ALIGNMENT



7.3 COURSE DESCRIPTIONS

8 | PHYSICAL EDUCATION

8.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN PHYSICAL EDUCATION, WILL ...

8.2 COURSE DESCRIPTIONS

9 | SCIENCE

9.1 PORTRAIT OF A GRADUATE

AN INDIAN SPRINGS SCHOOL GRADUATE, HAVING COMPLETED THE COURSE OF STUDY IN SCIENCE, WILL ...

- Engage in scientific questioning to extend thinking and guide research.
- Utilize experimental design and the scientific process to explore new ideas or solve problems.
- Implement appropriate data collection techniques and analysis to interpret relevant scientific data versus biased data.
- Evaluate scientific evidence to reach a valid conclusion.
- Understand and appreciate the interconnectedness of the sciences.
- Conduct literature reviews in order to incorporate other research into science writings.
- Present research in front of a group of peers and defend research under questioning.
- Apply appropriate mathematical principles and graphical analysis to solve problems and support ideas.
- Utilize statistical tests and methods to accept or fail to accept scientific hypotheses.
- Use the appropriate lab equipment, techniques, and technology when investigating scientific inquiries.
- Use models and representations to communicate scientific phenomena and solve scientific problems.
- Engage in problem solving, inquiry, and design of innovative solutions.
- Integrate prior knowledge with new information in novel and creative ways to strengthen overall understanding.
- Develop curiosity for the natural world with regard to scientific inquiry.
- Apply conceptual understanding and critical thinking to real world problems.
- Promote environmental stewardship.
- Demonstrate the ability to collaborate with peers during scientific explorations.
- Make a scientific claim and provide supportive evidence.
- Connect the microscopic to the macroscopic across scientific disciplines.

9.2 COURSE DESCRIPTIONS

10 | INDIVIDUALIZED LEARNING

10.1 COURSE DESCRIPTIONS

11

MALONE SCHOOLS ONLINE NETWORK

11.1 COURSE DESCRIPTIONS

12 | APPENDIX

12.1 SPECIAL DATES

12.2 DAILY SCHEDULE

12.3 SPECIAL SCHEDULES

12.3.1 45 Minute Activity Period

12.3.2 60 Minute Activity Period

12.4 FORMS

12.4.1 Academic Overload Form

12.4.2 Departmental Overload Form

12.4.3 Non-Springs AP Exam Request

12.5 SAMPLE ACADEMIC PATHS

12.6 FAQ