

*INTERSESSION 2005***FULL-TIME SESSIONS, Morning/Afternoon****10A01 Aayyyy: A Fonzie Impersonator Told a Joke to an IMSA Student and the World was a Better Place. Juku School Goes to Comedy School**

Full-time morning/afternoon

Can comedy help develop community? This program is looking for a diverse group of bright and motivated young people who must be inspired to learn and wish to pursue their learning with similarly motivated students. Over the last 15 years, there has been a plethora of research detailing low retention rates of American students in college programs in technological fields. Countries and provinces like Japan and Hong Kong have an outstanding rate of students completing technological degrees at American colleges. Some researchers have attributed the lack of retention for American students to our culture of individualism. This session will take a page out of Juku school curriculums by having students take part in highly physical and mental challenges as a team. In addition to learning what it means to part of a Juku community, students also will be analyze famous comedians like Chris Rock, Richard Pryor, the Will Farrell, to name a few, through the eyes of a community developer. Regardless of your current knowledge of the world problems, if you're concerned about people and want to help put a dent in this world, join this intersession.

Prerequisite: Due to the strenuous workouts, students must be in reasonably good physical shape.

Robb Gill, IMSA Staff
Andrea Frazier, IMSA Staff

10A02 Beginning Poetry Writing

Full-time morning/afternoon

Throughout the week we will explore both craft and content and their importance to beginning writers of poetry. Sessions will include some time for reading and analysis but will consist primarily of discussions, workshops and individual conferences. The week will end with a reading of students' work.

Prerequisite: A little bit of courage, a lot of honesty, and a willingness to have fun.

Mr. Brendan Todt, Class of 2002
Dr. Dana Goodman, IMSA Faculty

10A03 Controversial Comedy: Portraits of Race, Sex, Gender, Drugs and Religion in a Historical Survey

Full-time morning/afternoon

The purpose of this course is to expose students to how modern historical and social events have shaped comedians and their comedy over the last 40 years. Students will view a range of comedians in the context of their life and times, with lectures and materials relevant to the periods they are made to represent. Ultimately, students will learn to understand the connections between historical and societal pressures and the manifestations of humor in modern entertainment, with the goal of learning critical and analytical apparatus that can be applied to the contemporary world and their experience of it. The intersession may, pending concert dates, include a trip to see The Second City in Chicago, as a supplement to the course content.

Prerequisite: None

Derek Lough, IMSA Student
Tracy Townsend, IMSA Faculty

10A04 Curious George Goes to the Theatre

Full-time morning/afternoon

Students will discover and enjoy the art of theatre. We will be covering every aspect of putting on a production including directing, playwriting, improv, blocking, acting, warm-ups, lighting, set, costumes, makeup, and sound. Students will work on writing a one-act play to be potentially performed as a play for the school in the drama season. Students will be working with a well-known play to really become familiar with the workings of a production.

Prerequisite: See Julie for application.

Ms. Julie Dowling, IMSA Staff
Mr. Rob Moranetz, IMSA Staff

10A05 HORSE!

Full-time morning/afternoon

This intersession is a paean to the horse: his beauty, utility, athleticism, and enduring meaning for mankind. Through historical readings, film, art and literature, and field trips to meet, study, and draw real live horses, we will consider the political, economic, artistic, and spiritual impact of the horse on human societies around the world from earliest times to the present.

Prerequisite: An abiding passion for the history, beauty, and romance of this marvelous animal and a willingness to grow intellectually, aesthetically, and spiritually as we celebrate all things equine.

Dr. Jean Kadel, IMSA Faculty

10A06 IMSA on Wheels

Full-time morning/afternoon

Learn how science can be fun and exciting by delivering a traveling science show to elementary students. You'll be trained in presentation and showmanship skills as well as physics demos and interactive educational skits.

Prerequisite: Selected students must attend a training session in December. Post Intersession shows are scheduled on "I" days through May, so Mentorship students should not enroll. Some accommodate early morning or late afternoon shows.

Ms. Karla Schmidt, IMSA Student

Dr. Don Dosch, IMSA Faculty

Mr. Terry Tao, IMSA Student

Mr. Chris Lin, IMSA Staff

10A07 Inquiry for Intersession

Full-time morning/afternoon

Students with an approved plan of Inquiry may pursue that work for either half-time or full-time during Intersession week.

Prerequisite: Approved plan of Inquiry, approved plan for use of Intersession time, and permission of Inquiry Advisor and Coordinator of Student Inquiry.

Dr. Judith Scheppler, IMSA Faculty

10A08 Introduction to Space Mission Analysis and Design

Full-time morning/afternoon

This intersession is an introduction to the real-life engineering challenges of designing a space mission. The course will cover the basics of orbital mechanics, the space environment, attitude and control systems, electric power systems, rocket propulsion, space communication, thermal and structure systems and current methods for the design of complex engineering systems.

Prerequisite: Trigonometry, Algebra, Advanced Physics, MS Excel

Chris Swan, Class of 1996

10A09 Karate Camp: The Art of Shorin-Ryu

Full-time morning/afternoon

This course is designed for both beginners and experienced martial artists. Although the course will concentrate on the teachings of Matsubayashi Shorin-Ryu, aspects of Tae Kwon Do (such as advanced kicks) and other martial arts will be incorporated as well. Students will learn valuable self-defense strategies and sparring techniques, as well as the philosophy and history behind Matsubayashi Shorin-Ryu. Students who develop a firm grasp of the concepts and techniques taught during the intersession will have the opportunity to test for rank at the end of the week. Students will also have the chance to visit a Tae Kwon Do school in Wheaton. All students must wear a traditional white uniform to class each day. The cost for this intersession consists of the following: \$30.00 for a white traditional uniform (if one is not already owned), \$30.00 for the optional certified belt test, and a mandatory \$5.00 equipment fee.

Prerequisite: None

Ms. Cynthia Dang, Class of 2003

Mr. Dean Dieker, Class of 2003

Dr. David Evenson, IMSA Staff

10A10 Mentorship

Full-time morning/afternoon

With mentor and parental approval, students may work on their research for a concentrated period of time during Intersession week. Students must spend each day of Intersession at their mentorship site. Daily activities will be specific to individual mentorships. Transportation will not be provided: students will be responsible to make their own arrangements. The mentorship office must receive written details of transportation arrangements and parental permission by November 5.

Prerequisite: Students must submit a day-by-day proposal of planned activities, signed by the mentor, that will build on the December 15 Progress Report. An updated Progress Report will be due Tuesday, January 18."

Dr. Peggy Connolly, IMSA Faculty

10A11 Philosophical Perambulations

Full-time morning/afternoon

Long hikes, combined with readings, discussion and the perusal of works of art will explore the connections between landscape, the person, and collective memory. In the process, we will place our academic and personal work in context. At the end of the intersession, each participant will have produced "A Landscape" in words or pictures, including photography. These works will be shared with the community as a whole in an exhibit. You will need about \$20.00 for dinner Thursday evening.

Prerequisite: Participants must be physically capable of doing activity, and must use appropriate boots and outerwear.

Dr. Christian Nokkentved, IMSA Faculty

10A12 The Potter's Wheel: An Investigation of 5000 Years of Shape and Form

Full-time morning/afternoon

Students will investigate shapes and forms representing 5000 years of wheel thrown pottery. Students will then integrate these forms and ideas into their own wheel creations.

Prerequisite: Previous experience “throwing” pottery on the potters wheel or approval of instructor.

Mr. Clay Sewell, IMSA Faculty

10A13 3D Game Development

Full-time morning/afternoon

Students will develop their own stunning 3D worlds and game systems will at the same time gaining a broad understanding of the field of game development. We will take a look at some of the latest development tools and techniques. Methods will be covered for developing professional quality games on little-to-no budget by utilizing open-source development and the range of free tools and frameworks available. Students will start out with a comparison of different programming languages and game engines, move on to acquiring a good foundation in object-oriented programming with C# and the .NET framework, and then proceed to work individually or in teams to develop their own high-performance, shader-driven 3D computer game using the C# and the RealmForge GDK.

Prerequisite: Knowledge of an object-oriented programming language will be helpful, but not required. A combination of artists and developers will result in effective game development teams.

Dan Moorehead, IMSA Student

10A14 Zen Rasta

Full-time morning/afternoon

This is a parallel investigation into the worldviews of the Rastafarians and the Samurai. Literature, film, music and other aesthetic expressions will serve as our windows into these fascinating cultures. We will conclude with a discussion of the applicability of these two distinct worldviews to our increasingly interconnected web of globalization.

Prerequisite: Curiosity, mindfulness and a desire to know shibumi.

Mr. Michael DeHaven, IMSA Faculty

FULL-TIME SESSIONS, Afternoon/Evening

10B01 Madrigal Intersession

Full-time afternoon/evening

Developing a Madrigal Dinner – music, set construction, costume prep, blocking, etc.

Prerequisite: Madrigal member and/or approval from Ms. Kocek for technical participation.

Sherry Kocek, IMSA Faculty

Gregg Porter, IMSA Faculty

10B02 A Sceptred Isle in the Silver Sea: England in the Reign of Elizabeth I

Full-time afternoon/evening

In 1558, a young woman rose to the throne of England, an England torn by sectarian strife, threatened by renewed civil war, and surrounded by potential enemies. Over the span of 45 years, Queen Elizabeth I re-established religious stability in her realm and defended that realm from foreign invasion. Her mariners explored (and exploited) the oceans of the world, while she navigated the dangerous waters of European diplomacy and domestic intrigue. Finally, she helped to inspire a burst of creative energy that produced Shakespeare and Marlowe, Spenser and Sidney, Raleigh and Gilbert. In this intersession, we will study Elizabeth's life, the events of her reign, and the culture of her times. Most importantly, we will explore the cult of her personality, a force that inspired devotion from her subjects and still motivates historians to refer to her reverently: Gloriana.

Prerequisite: None

Dr. Robert Kiely, IMSA Faculty

Dr. Claiborne Skinner, IMSA Faculty

HALF-TIME SESSIONS, Morning

05A01 "Ballets Russes: Music, History & Performance"

Half-time morning

This course will examine some of the works composed for the Ballets Russes by Stravinsky and Debussy, among others. We will address issues of performance in both the concert and ballet venues, as well as attend a live performance of one of the works (TBD - if there is one in the Chicago area during spring semester).

Prerequisite: Must be able to read music; some music theory experience is helpful, but not necessary.

Ms. Joanna Messer, Class of 1997

05A02 Chess as a Tool to Enhance Analytical Thinking and Problem-Solving Skills

Half-time morning

Chess is an extremely complex game that is both intellectually challenging and rewarding to play. During this intersession, students will develop their analytical thinking and problem-solving skills as they study various aspects of the game of chess. Time will be used near the end of the week to run a tournament. This intersession is only for students who already know how to play chess.

Prerequisite: This intersession is only for students who already know how to play chess.

Mr. Joseph Traina, IMSA Faculty

05A03 Decoding the Da Vinci Code

Half-time morning

This course will be a focused examination of Dan Brown's The Da Vinci Code. We will explore the book as history, as a thriller, and as a popular novel. The course will proceed through discussion, individual research, group work, and a three-page paper will be produced by students.

Prerequisite: Students should have read Dan Brown's The Da Vinci Code before class.

Dennis Czerny, IMSA Faculty

05A04 Harry Potter as Science Teacher: Using Popular Fiction to Promote Discussions of Science and Science Ethics

Half-time morning

This intersession puts a science twist on the typical fiction book discussion, using popular fiction to encourage science literacy. Participants will explore the science content of popular fiction books for all ages, from elementary and middle school students to young adult and adult readers. Using such books as "Ender's Game", "Among the Hidden", "The Lorax", "Hoot", and (of course!) the Harry Potter series, intersession participants will discuss the topics in science or science ethics that are presented in each novel. Working in groups, ideas for science-based activities and discussions will be generated and explored further through research using library, internet, and database sources. At the conclusion of each day, participants will present their research findings and activity ideas to the rest of the group.

Prerequisite: A love of reading is required for this intersession. Each day a new book will be explored. Contact Dr. Storm at sstorm@imsa.edu before break to get a copy of the intersession reading list so you can get a head start on reading the novels to be discussed.

Dr. Shannon Storm, IMSA Faculty

05A08 Quantitative Decision Making

Half-time morning

We will survey a number of topics in quantitative decision making and practice several methods to arrive at “reasonable” (not necessarily optimal) decisions. In real situations, just setting up a problem is often a major hurdle. So we will review how to define an objective function, decision variables, other parameters, and constraints. And we will organize these into models that can be solved or at least analyzed in Microsoft Excel. We will also review how to present recommendations to an unfamiliar or skeptical audience. Examples will include stylized problems as well as actual finance, operations, and management problems. Each student will be assigned a decision problem to solve and present by the end of the week.

Prerequisite: Familiarity with Microsoft Excel

Mr. Pranav Kiran Parekh, Class of 1992

05A09 Science Explorers Boot Camp

Half-time morning

Join the Science Explorers team and learn how to develop engaging hands-on curriculum for elementary student summer camps. Topics have been selected and hour planners will be refined according to student interest. Elementary students will come to IMSA on a class field trip at the end of the week to test the curriculum and to give IMSA Science Explorers an opportunity to teach young explorers.

Prerequisite: IMSA students should have attended a Science Explorers information session prior to Intersession.

Dr. Sue Styer, IMSA Faculty

05A10 Survey Research: Design and Analysis

Half-time morning

Participants in this intersession course will learn how to construct effective surveys for social science research and will be exposed to basic issues in response analysis. Topics include survey design, item construction, and analysis issues related to applications in various circumstances. Students will also be exposed to technology tools for data collection and analysis that are available for their use at the academy. We will also discuss ethical issues and issues related to human subjects.

Prerequisite: None

Mr. Christopher Kolar, IMSA Staff

05A11 Sustainability: Awareness for an Answer to American Culture

Half-time mornings

This course will offer an overview of common American systems of agriculture, government, and consumerist idealism, and the problems each of these presents for the future. The bulk of the course will be information on alternative methods to these practices, their importance and availability. Students will be introduced to sustainable energy and food production technologies. We will likely eat some amazing food. The session will conclude with a spiritual component, focusing on meditation, yoga, and possibly reiki healing, depending on the interest of the class.

Prerequisite: This session will be worthwhile only with students who are ready to be involved, interested, and motivated. Concern for health, the Environment, and personal growth are encouraged but not required.

Miss Kelli Willis, Class of 2001
Dr. John Eggebrecht, IMSA Faculty

05A12 The Art of Folding Paper: Origami

Half-time morning

This activity is the education of how to fold paper in a creative way, called Origami. Important techniques need for folding paper into different objects will be learned, and also some special techniques not shown in the books. Those who participate in this activity will learn first hand how to make flowers, birds, balloons. Anyone can participate, whether or not they have any past knowledge of Origami.

Prerequisite: None

Miss Shanna Wilcox, Class of 2004
Socorro Cintrón, IMSA Faculty

05A13 The Image of War

Half-time morning

Students will have an opportunity to explore how war has been portrayed in four major conflicts - The Spanish American War; World War II; Vietnam; the Gulf War (I and II).

Prerequisite: None

Dr. Jim Victory, IMSA Faculty

05A14 Wargaming Simulations

Half-time mornings

This intersession will provide the students, grouped in pairs or more, to play a single simulation that covers a specific conflict. Simulation possibilities will cover board and

computer games, along with miniatures. The last class will be set aside for presentations by student groups concerning the historical outcome of the simulation as opposed to what gamed-out. Simulations and partners will be selected in a pre-intersession December meeting.

Prerequisite: Must have at least one (max. two) pre-intersession meeting(s).
These will be in December – to chose who will play what game.
Students must study the rules prior to the first meeting.

Dr. Lee Eysturlid, IMSA Faculty

HALF-TIME SESSIONS, Afternoon

05B01 AIME Practice

Half-time afternoon

This intersession will focus on preparation for the American Invitational Math Examination (AIME). Each year, over 100 IMSA students do well enough on the AMC10 and AMC12 to qualify for the AIME. The AIME is a very difficult 3 hour exam with 15 total questions. Success on the AIME can result in qualification for the USA Math Olympiad (only 250 students nationwide qualify for this each year). In the intersession, previous AIME problems will be reviewed, and general test taking strategies will be discussed.

Prerequisite: MI3 or above

Mr. Albert Ni, IMSA Student

Mr. Abhi Gulati, IMSA Student

05B02 Building Your Own Computer

Half-time afternoon

In this class, students will have the opportunity to build their own computers from readily available individual parts. Students will be expected to attend one meeting before the class to go over purchasing parts. These parts will be paid for by the student.

For the first half of the class, we will cover assembly and theory of operation of the computer; for the second half, we will cover various topics of Linux, including installation and daily use.

Prerequisite: None

Mr. Jonathan Rockway, Class of 2004

Mr. Andrey Warkentin, Class of 2004

Mrs. Diane Hinterlong, IMSA Faculty

05B03 Exploring Modern Mythology: Lord of the Rings vs. Star Wars

Half-time afternoon

This will be a chance to go over classical mythology, it's ideals, classic heroes, villains and trials. Then take these and measure them against popular stories of the past 50 years, focusing on Lord of the Rings and Star Wars. Harry Potter, Buffy the Vampire Slayer, The Matrix and other contemporary heroes will also be touched on.

Prerequisite: Knowledgeable about the Star War Movies, Expanded Universe optional. Having read the Lord of the Rings trilogy, knowledge of the recent movies is optional.

Andrea Lang, IMSA Staff

05B04 Fiction Writing: Listening to your Life

Half-time afternoon

Creative writing offers us the opportunity to grapple with all kinds of experiences, ideas, feelings, from an angle that often proves more accommodating than a direct, analytical approach. This course aims to facilitate writing fiction that connects emotionally to its author and its audience. A general method, beginning with free writing, will be offered as an outline. We will offer each other feedback on our writing, as well as reading and discussing short pieces by excellent writers.

Prerequisite: None
Nate Roberts, Class of 1996

05B05 Harvard or Bust: An Engaging Week of Self-Discovery and College Exploration

Half-time afternoon

Your parents have already decided that you will go to college, of course. But, which one? And why are you going? To become an engineer? To gain admission to law school? To play intramural chess? To learn how to ski? Sign up for this intersession and you'll find answers to all of your questions -- and you'll learn some important things about yourself!

Prerequisite: Open to juniors only!

Ms. Julia Husen, IMSA Staff
Mr. Phil Trout, IMSA Staff
Ms. Danielle Calhoun, IMSA Staff

05B06 Introduction to Alternative Medicine

Half-time afternoon

An overview of current alternative medicine methods and modalities will be presented. Topics will include Western traditional methods, Western adaptations of Eastern methods, Western modern methods, public policy and current political issues surrounding the industry. The approach will be centered from a holistic/naturopathic approach and will compare and contrast to current allopathic approaches.

Prerequisite: Prior to class, students should compose a list of alternative medicine methods that they personally have either experienced or been exposed to in their lifetimes.

Scott Swanson, Class of 1990

05B07 It All Comes Down To Personality

Half-time afternoon

This course will examine and evaluate modern psychological theories of personality, including conflict, fulfillment, and activation models. Students will have an opportunity to take several personality tests in the course.

Prerequisite: None
Dennis Czerny, IMSA Faculty

05B08 Keeping Score at Baseball Games

Half-time afternoon

We will learn to keep score of a baseball game in at least two different ways, matrix form and linear. Keeping score is an active manner to watch a game, maintain focus on the events while anticipating upcoming scenarios. A good record of a game provides insights into strategy and to the myriad of combinations that can occur in a game. It also develops the cant of inside baseball conversations, revealing such statements as “6-4-3.”

Prerequisite: Interest in baseball, or interest in developing an interest in baseball.
Dr. Michael Keyton, IMSA Faculty

05B09 Math Explorers 2005

Half-time afternoon

This session is intended for those students who wish to teach in the Math Explorers program in the summer of 2005. Students will learn about topics that will be covered in the summer. Students will then work in groups as we start the process of developing the curriculum for the summer program.

Prerequisite: Interest in mathematics and teaching.
Dr. Steven Condie, IMSA Faculty
Mrs. Britta McKenna, IMSA Staff

05B10 Mathematics of Option Pricing

Half-time afternoon

This session examines the partial differential equation (PDE) approach to valuation of financial option contracts, such as puts and calls. These contracts give the holder an option to buy or sell a stock at a known price at some future point in time. We will apply mathematical and financial reasoning to derive the Black-Scholes PDE for European options and then extend the argument to more complicated contracts, such as American and Perpetual options. Along the way, we will see that much of financial mathematics is based on concepts from physics. For example, the Black-Scholes equation is closely related to the heat equation, which describes the diffusion of heat in a long bar. And the technique for finding the value of an American option is closely related to finding the shape of a string stretched over an obstacle.

This session focuses on formulating problems. Students interested in how to solve them should also register for “Four (or More) Ways to Solve the Heat Equation” - #05C02.

Prerequisite: Calculus AB II or BC II. Previous experience with differential equations is helpful, but not necessary.

Mr. Pranav Kiran Parekh, Class of 1992

05B11 Middle Eastern Dancing

Half-time afternoon

Students participating will learn a variety of Belly Dancing steps, including slow and fast-paced movement. A performance at the end of the Intersession is planned.

Prerequisite: Females only. Dance experience is encouraged, but not required.

Ms. Pooja Agarwal, Class of 2001
Dr. Dana Goodman, IMSA Faculty

05B12 Moving Pictures

Half-time afternoon

This is a project-based activity. Digital media still, animation, and video formats can be manipulated using Photoshop, Freehand, Fireworks, Flash, and Final Cut Pro. You learn to use, or enhance your skill in the use of these tools, by doing. Come do.

Prerequisite: None

Dr. John Eggebrecht, IMSA Faculty
Ms. Lacy Simons, Class of 2002

05B13 Mythology and Super-Heroes

Half-time afternoon

Super-heroes are more prominent than ever with each new blockbuster film. This class will explore the comic book super-heroes of today, such as Spider-Man, Batman, Superman, the Fantastic Four, and their similarities to mythological heroes and stories. We will focus on 1 or 2 heroes a day and read their most important adventures. We will also read selected myths, and see how heroic morality and motivations have changed, both since the ancient world and since the debut of these comic book heroes.

Prerequisite: None – only an interest in super-hero or adventure fiction.

Mr. Eric Engelhard, Class of 1996

05B14 Patents and the Law

Half-time afternoon

Students who are interested in math, science, and technology have many avenues of learning open to them, but relatively few consider the possibility of pursuing a legal career. Although a technical background provides a more-than-adequate foundation for any area of legal practice, those with degrees in engineering or science often find their greatest rewards in practicing patent law. This course will provide a basic introduction to the American legal system, intellectual property law, the process of obtaining patents for oneself or one's clients, and the process of defending one's intellectual property rights. Over the course of the week, students will work as a group to draft a 'patent' covering a simple invention and will plot out a strategy for defending it against a competing product. The class will also hold discussions of the policies that patent law seeks to advance and the competing policies that are (or may be) retarded by choosing to protect inventions in the way we do.

Prerequisite: None

Mr. Chris Kaiser, Class of 1992

05B15 Physics of Sports

Half-time afternoon

Study the science involved in basketball, volleyball and other popular sports. Students will calculate energy, force, velocity and acceleration of players and equipment. Students will compete in 3 on 3 competition. Students should sign up for course with two friends.

Prerequisite: None

Mr. Branson Lawrence, IMSA Faculty
Dr. Don Porzio, IMSA Faculty

05B16 Stompin' At The Main Building: Introduction to Lindy Hop

Half-time afternoon

Maybe you know the basics of swing dance, but you'd like to take your dancing to the next level. Maybe you already know some lindy, but would like to polish your technique and pick up some new material. Maybe you've done some social dance before and want a more in-depth class than Got Swing?. If any of these describes you, don't wait, sign up for this class now! Lindy hop is the /lingua franca/ (that's Latin for "awesome dance") of the swing scene. It's the dance from which most other swing dances came, and if you learn it, you can hold your own on any dance floor. As a special bonus, the first hundred people to sign up will get to learn some extra bonus material (like line dances, dips, other swing dances, or whatever seems fun) if time permits. See you on the dance floor!

Prerequisite: Participants should be comfortable with East Coast swing/jitterbug. Experience with other partner dances (e.g., salsa, waltz) may be acceptable; please contact the instructors.

Mr. Neal Groothuis, Class of 1997
 Ms. Amber Thompson, Class of 2003
 Mrs. Nancy Todnem, IMSA Faculty

05B17 Swimming Forum on Speed Work: Theory and Practice

Half-time afternoon

This year's intersession on competitive swimming focuses on speed work as an integral part of the training cycle for both distance swimmers and sprinters alike. As in previous years, the course will have both discussions and a practical component. While swimmers cover topics such as strength work, reaction time, recovery, and stroke mechanics, they will both have the opportunity to discuss theory and practice with an experienced coach and be able to try out those ideas both in and out of the pool in a problem-based learning environment.

Prerequisite: A background in competitive swimming is required. The ability to swim at least 2000 yards per hour is required. Members of the Boys' and Girls' swimming teams are highly encouraged to enroll. Other students may enroll with permission of the instructor.

Dr. Chris Colburn, IMSA Staff

05B18 The Coming Plagues

Half-time afternoon

This intersession will examine the potential negative interactions between microbes and humans. We will look at a few ‘plagues’ from history (The Black Death, Influenza of 1918, Cholera pandemics), and then spend most of our time talking about microbes which might cause epidemics and/or pandemics in the future. We will spend some time talking about the microbe’s ability to cause disease (pathogenicity) as well as the human’s ability to resist disease (immune response). The social and economic implications of epidemics will also be explored.

Prerequisite: Scientific Inquiries and at least one course in Biology (pre-IMSA or Biology elective at IMSA). Helpful elective: General Microbiology

Dr. Ed Goebel, IMSA Faculty

05B19 The Golden Age of Italian Opera

Half-time afternoon

In this intersession, students will experience three distinct styles of 19th-century operatic writing by three Italian masters: Gioacchino Rossini, Giacomo Puccini, and Giuseppe Verdi.

Prerequisite: None

Mr. Michael Sloan, IMSA Faculty

HALF-TIME, Evening**05C01 Celtic Cultures**

Half-time evenings

Learn about many different aspects of Celtic culture. Each day will include learning Irish dance steps, a discussion with Dr. Skinner, and plenty of great Celtic music. The basics of Celtic style calligraphy and embellishment will also be taught and students will have a chance to work on their own projects.

Prerequisite: None

Ms. Sara Goek, IMSA Student

Mr. Ira Miller, IMSA Student

Dr. Claiborne Skinner, IMSA Faculty

05C02 Four (or More) Ways to Solve the Heat Equation

Half-time evening

Many types of mathematical problems cannot be solved exactly (or at least cannot be solved efficiently) using analytic methods, and we instead apply numerical methods to approximate solutions. This session introduces a variety of numerical techniques to solve the heat equation, with a focus on finite difference schemes. Before jumping into the deep end, we will consider the simpler problem of solving ordinary differential equations using the Forward Euler, Backward Euler, and Trapezoid methods. And we will verify

the conditions under which these methods converge to a solution. We will then generalize what we have learned for systems of differential equations. Finally, we will apply these techniques to the solution of the heat equation. Depending on time and interest of students, we will cover four or more methods: Back Substitution, Gaussian Elimination, Lower-Upper Factorization, Jacobi, Gauss-Seidel, and/or Successive Over Relaxation.

Prerequisite: Calculus AB II or BC II and familiarity with matrix operation.
Computer science background is helpful, but not necessary since coding exercises will be optional.

Mr. Pranav Kiran Parekh, Class of 1992

05C03 Fun with Surfaces

Half-time evening

In this intersession, we plan to explore some unusual surfaces. These will include Mobius strips, Klein Bottles, surfaces of bagels and pretzels and others. We will also investigate the properties of triangles on spheres and other surfaces, and compare and contrast this with the familiar geometry of the (x,y)-plane. We will explain properties that distinguish the Mobius strip from the cylinder and properties that distinguish donuts from pretzels. We will also enjoy watching the math movies.

Prerequisite: None

Matt Day, Class of 1998
Travis Schedler, Class of 1998

05C04 Got Swing? : Introduction to East Coast Swing

Half-time evening

Want to learn to swing dance? Can you count to three? Then this class is for YOU. We'll teach you how to jitterbug like they did in the 30's and how to charleston with the heppiest of cats. You'll learn basic steps and turns, plus (time permitting) other stuff like crazy variations on moves and line dances. Grab your dancing shoes and get ready to hit the floor!

Prerequisite: None
Mr. Neal Groothuis, Class of 1997
Ms. Amber Thompson, Class of 2003
Mrs. Nancy Todnem, IMSA Faculty

05C05 "Mad Thou Art": Madness in Modern Cinema

Half-time evening

This course will look at the theme of madness in modern cinema. The course will examine the portrayals of madness in films such as One Flew Over the Cuckoos Nest, Pi, I Never Promised You A Rose Garden, and Girl Interrupted.

Prerequisite: None
Dennis Czerny, IMSA Faculty

05C06 Science as a Social Process (or Scientists are People, Too)

Half-time evening

In this session, we will investigate science as a social process, asking (and perhaps even answering) such questions as: How do scientists create knowledge? How do they communicate? How do they define their boundaries? What does a discovery look like as it is being made, and how does that differ from the way that it is later described in a textbook? What are the social forces that act on science from both “outside” and “inside,” and how do these forces affect the process? As we read selections from the history, philosophy, and especially sociology of science, we will look beyond the institution of science at the people who create it. Then we will take what we have learned and try to discern the processes that led up to a few great discoveries in science. Finally, we will ask ourselves, what does it mean to be a student at the Illinois Mathematics and Science Academy?

Prerequisite: None

Ms. Jennifer Davis, Class of 1995

OFF CAMPUS TRIPS

OC01 Art in a Box: A Charleston Treasure Hunt

Off Campus Trip

Full-time

Students will receive training in assemblage art through hands on assignments that will focus on the elements and principles of design. We will travel through the Southern Corner of the United States with our destination being Historic Charleston, South Carolina. Throughout the trip, each student will encounter a myriad of artistic and cultural experiences. From things as simple as tasting grits for the first time, and learning how to be a southern lady, to things as complex as exploring the psychology behind folk art, and learning how to translate visual experiences into works of art. Each student will be responsible for the completion of assignments given as well as collecting items throughout the trip that will be used to inspire a final work of art. The students' ideas of art will be challenged through unorthodox assignments designed specifically to push them beyond their rudimentary concepts of what art involves.

Prerequisite: Students must have an interest in general art including contemporary and round object art, though no previous experience is necessary. Must enjoy road trips, motion sickness could be a problem. Unfortunately, this trip will be open to females only, due to the fact that there are only female chaperones.

Leigh White, IMSA Staff

Sarah Blosser, IMSA Staff

OC02 Deriving Disney

Off Campus Trip

Full-time

When you wish upon a star, do you wish to spend your intersession at Disney World? Be a part of IMSA's own Mickey Mouse Club as you travel to Walt Disney World in Orlando, Florida to participate in Disney's Youth Education Series. Zippity-Doo-Da with us as you address subjects such as physics, marine biology, and technology. You will participate in three different educational programs throughout the week ranging from exploring the physics of Space Mountain to interacting with a Disney Marine Mammal Trainer. Join us for a supercalifragilisticexpialidocious time!

Prerequisite: \$250 down payment-Monday, November 1st

Linsey Crowninshield (Doc), IMSA Staff

Samantha Schneider (Bashful), IMSA Student

OC03 Eco Tour To Bonaire Island in Dutch Antilles

Off Campus Trip

Full-time

Students will visit Bonaire, a small, Caribbean island 45 miles north of Venezuela. Accommodations will be in a five-bedroom house owned by a Parkland College professor from Illinois. Learning and leisure activities will

include visiting a sanctuary for wild, abandoned donkeys; snorkeling coral reefs with an oceanographer; kayaking mangroves with a naturalist; learning how solar and wind power are used on the island, and visiting a sea turtle restoration site. Leave Chicago on Sunday, Jan.9 and return Saturday, Jan.15. The cost will be approximately \$1,000.00. This Intercession can accept 8-10 students and will do so on a first come, first serve basis. Contact the organizers for more information on signing up and making a deposit to secure a place.

Audrey Wells(awells@imsa.edu) and Deb McGrath(dmcgrath@imsa.edu).

Prerequisite: None

Audrey Wells, IMSA Staff
Deb McGrath, IMSA Staff

OC04 Homes of Hope Intercession in Tijuana, Mexico

Off Campus Trip

Full-time

In Tijuana, Mexico, a group of 22 students, comprised of mainly LEAD/Synergy/Outreach team members, will embark on a six-day eye opening adventure. For the first three days, students will show their Outreach presentation to middle schools in the San Diego area. For the remaining duration of the trip (3 days), students will be building a home with the program Homes of Hope for an underprivileged family. Homes of Hope will provide everything needed for the three days, from transportation to materials, and carpenters to build the house. The hope for this trip is not only to build a home but also that the students gain an understanding of a culture so different from their own.

Prerequisite: A passion for wanting to help. Group for this trip has already been selected.

Margot Seigle, IMSA Student
Rachael Parrish, IMSA Student
Dr. Aracelys Rios, IMSA Faculty

OC05 Scuba Diving

Off Campus Trip

Full-time

Discover the beauty and diversity of our underwater world. This scuba diving adventure takes place on the Caribbean island of Cayman Brac, where you will earn PADI certifications including Rescue Diver, Emergency First Response, Advanced Open Water, Coral Reef Conservation and Fish Identification.

Prerequisite: Open water diver certification. A current passport (if not a US passport, a visa may also be required). Group for this trip has already been selected.

Susan Bernal, IMSA Staff

OC06 Trip to Spain

Off Campus Trip

Full-time

Visit Madrid and surrounding cities (Toledo, Segovia, Avila). Improve your Spanish. Experience life in Spain's capital and enjoy cultural activities such as visits to museums, a soccer game, a flamenco performance, a visit to a school, shopping, local cuisine, etc.).

Prerequisite: Open only to students in Spanish III-V and native speakers of Spanish (If space is available).

Mr. Jose Palos, IMSA Faculty

Danielle Berry, Class of 2001

Paula Altekruise, IMSA Staff

OC07 Tropical Forests of Costa Rica 2005

Off Campus Trip

Full-time

This trip will explore the cultural history, climatology and geology of this Central American country, but primarily it will compare and contrast the ecology of tropical dry forests with tropical rain forests. This trip is coordinated through the Organization for Tropical Studies, a consortium of American Universities centered at Duke University.

Prerequisite: Group for this trip has already been selected.

Mr. John Thompson, IMSA Faculty

OC08 2005 Spring Break Intersession in St. Petersburg, Russia

Off Campus Trip

Full-time

IMSA students of Russian 2 and 3 will travel to Russia in order to practice their language skills in an authentic environment. We will spend one week in St. Petersburg, visiting places of historic and cultural significance, as well as interacting with Russian people. We will experience what everyday life is like in St. Petersburg.

Prerequisite: Open to students of Russian 2 and 3. Students will attend mandatory Orientation sessions.

Mr. Paavo Husen, IMSA Faculty