

IPAK-EDU

Course Catalog 2022-2023



IPAK-EDU

Libertate per scientiam

www.ipak-edu.org

Welcome to IPAK-EDU!

Our mission is to provide fundamental knowledge so the public can empower themselves and be ready to engage in the public square relating to matters that influence all: public health, gene modification, and the increasing imposition of both powerful technologies and group think in every aspect of our lives. Our instructors are challenged, by me, to produce and teach the course of their lifetimes. Lectures in each class are available to registered for review following their live presentation.

When you finish a course at IPAK-EDU, you will be more conversant and better informed in the topic of the class. I recommend everyone take “How to Read and Interpret a Scientific Study” so you can better access the recommended readings for all courses. We offer a college major-level course in Biology (two semesters) to allow you to be better able to learn genetics, immunology, environmental toxicology, and of course specialty courses in health and wellness. Our Psychology track courses will help you engage in thinking about your own mind better, and in a healthy and productive manner.

All students should want to be able to interpret and understand published data - or even re-analyze. I recommend starting with Spreadsheets 1, and then moving on to Applied Biostatistics. We place a premium on improving numeracy in as many of our courses as possible.

We believe that every citizen should participate in their own government, which is why we offer courses like “The History of Laws and Rights in the West” and the summer bootcamp course “Historic and Current Threats to the US Constitution.” Additional courses related to Law such as “Medical Freedom

and Informed Consent” will empower individuals with first-hand experience in reading the source materials that defines the legal landscape of today.

As we grow, we will be more courses - and more sophisticated topic areas like Principles of Study Design, Computational Statistics, and Principles of Machine Learning so students can comprehend with a high degree of granularity studies that are likely to have major impacts on our own, and our children’s life decisions.

All our students are asked to be prepared to participate in the discussion and Q&A at the end of each class. Our community has grown from twenty-four students in 2018 to over 500 in 2022 and from one instructor to 17. Our talented instructors put all they have into each class, and into each lecture.

Watch for special “Current Readings” courses in specific topics offered by our instructors so they can help you keep up to date on the most relevant current discoveries in each area. We do not offer a terminal degree; instead, our goal is to provide a lifetime of ongoing learning, and a thriving community of individuals who are ready to have an impact on their own communities with global, emergent, positive impact.

Time to get your brain on. We are looking forward to seeing you in class!

James Lyons-Weiler, PhD
Founder/Owner IPAK-EDU LLC



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Analytics

The Math of Vaccine Studies

Students in this course will learn to understand the math used in vaccine studies (vaccine efficacy, vaccine effectiveness, relative risk, absolute risk, odds ratios and others). Prerequisite (recommended): Spreadsheets 1

Instructor: **Faculty**

Day: TBA Time: TBA

Bioinformatics

This course will provide with an introduction to some of the important fundamental skill sets in Bioinformatics. In-depth description of methods and algorithms will provide background and hands-on experience with software will provide practical experience. Concepts and approaches to DNA and amino acid sequence alignment, homology, conserved domain identification, phylogenetic inference, array-based transcriptomics, quantitative PCR analysis and peptide identification searches will be presented. Basic computing skills are required.

Instructor: **Lyons-Weiler**

Day: Tuesday Time: 11AM ET

Health Studies

Microbiome Master Class

This bootcamp master class will provide the student with knowledge and viewpoints on the human microbiome, including microbiology, immunology, ecology, environmental toxicology, herbology, and foodology.

Instructor: **Compendium**

Day: TBA Time: TBA

Law

Constitutional Law Bootcamp

In this course, students will learn the fundamentals of the US Constitution, including historic and current threats to individual rights.

Instructor: **Rigney**

Day: Thursday Time: 3PMET

Medical Ethics and Informed Consent

An online, live discussion of specific readings on medical rights and informed consent. Topics include individual rights, human subject experimentation, Nuremberg, Helsinki, Universal Declaration of Human Rights, Informed Consent Doctrine (Medicine), Informed Consent Doctrine (Human Subjects), Right to Try, DNRs, Vaccine Choice, Special Protections, Privacy Rights, Executive Powers, Constitutional Infringement

Instructor: **Pajer/Lyons-Weiler**

Day: Wednesday Time: 11AM ET

Biology

Bio-A

IPAK BIO 111/BIOLOGY A is a 15- week course in the fundamentals of Biological Sciences. This course is the first of two courses designed to teach the public the fundamentals of biology. The sister course, IPAK BIO 112 is offered in the alternative semester. IPAK BIO 111 is a pre-requisite for IPAK BIO 112 and other courses in the Biology track offered by IPAK-EDU.

Instructor: **Lyons-Weiler**

Day: Tuesday Time: 11AM ET

Biology of Nutrition

This course will focus on the biology of nutrition throughout life. Students will read papers and studies in the week before each topic and will bring their own perspectives to the discussion. We will focus, as much as possible, on biological mechanisms of nutrition and health, anchoring findings from clinical and epidemiological studies in the context of systems biology.

Instructor: **Gaeta**

Day: Wednesday Time: 1PM ET

Environmental Toxicology

Similar to 200- or 300-level course, instruction is on details of all aspects of environmental toxicology, including toxins in our food, water, air and pharmaceuticals.

Instructor: **Lyons-Weiler**

Day: Thursday Time: 1PM ET



Microbiology for the Masses

Students are introduced to microbes and their effect on daily life and technology. There will be four sections in the course, beginning with an introduction to the basics of the discipline, as well as a discussion of the diversity and classification of microorganisms. The second section of the course focuses on microbial biochemistry and metabolism, emphasizing the differences between eukaryotes and prokaryotes as well as the effects of microbial metabolism on nutrient cycling. Next, we will examine how microbes grow, control their growth, and examine the factors that influence pathogenicity. The course concludes with a discussion of the genetics of microbes and their influence on the development of industrial, medical, and pharmaceutical technologies. Prerequisites - BIO A and BIO B (or with permission of the instructor)

Instructor: **TBA**

Day: TBA Time: TBA

Anatomy & Physiology A

Anatomy and Physiology courses 1 and 2 will cover every organ system in the human body, familiarizing the student with the structures and functions of cells, tissues, organs, and systems as well as how they interact with each other. Knowledge of normal anatomy (structure) and physiology (function) is the foundation for understanding how the body is expected to perform as well as the basis of understanding pathology (disease).

Instructor: **Liberty**

Day: TBA Time: TBA

Ecology for the Masses

This course will provide the students with knowledge on classical and modern concepts of Ecology with an emphasis on evolutionary dynamics. Classes will include opportunities to use and learn population growth models, species interaction models and other quantitative exercises.

Instructor: **Stephen**

Day: TBA Time: TBA

Chemistry

Chemistry for the Masses

Students taking this class will learn the principles of chemistry via discussions of examples of chemistry in the day-to-day lives. Topics covered are the same as those found in first-year college courses, with the fundamental concepts of chemistry explained in the specific setting of everyday chemical reactions in our lives.

Instructor: **Swain**

Day: Monday Time: 6PM ET

Psychology

How Not to Be Fooled

Since 2020, the manipulation of mass perception of reality has become increasingly obvious to many people in the US; however, most people do not have a context within which to interpret this phenomenon. In this course, all aspects of the pathological basis, effects and tools of mass perception manipulation will be explored with a focus on historical and recent examples.

Instructor: **McDonald**

Day: Wednesday Time: 6PM ET

Analytics

Spreadsheets 1

Students will learn elementary use of spreadsheets - and receive a series of math booster lessons along the way!

Instructor: **Lyons-Weiler**

Day: Wednesday Time: 1PM ET

Basic Principles of Epidemiology

This course will provide an overview of core principles in epidemiology, including quantification of morbidity and mortality, conceptualization of causality, overview of study design, screening, policy applications, and applications in behavioral, infectious, and genetic epidemiology. There will be two interactive sessions. The course will build on other courses that describe odds ratios and relative risks, as well as confounding, but students that have not had those courses will also get basic principles covered here."

Instructor: **Stein**

Day: TBA Time: TBA

Health Studies

Vaccine Course

Students will learn via readings and reviews of primary literature facts about the history of the impact of vaccines on human health. All lectures will provide key references and a solid basis for facts and realities of vaccines. Students will be able to use this knowledge in public discourse on vaccines in their personal lives and in interactions with others in the public square.

Instructor: **Angelantoni**

Day: TBA Time: TBA

Preventing & Reversing Chronic Illness

This course will focus on health issues including heavy metals, Candida, biological factors in cancer, autoimmunity, sleep hygiene, psychoemotional health, addiction and the mind/body connection.

Instructor: **West**

Day: TBA Time: TBA

Resolving Nutritional Confusion

A scientific examination of today's dietary theories, their impact on human health, and how both consumers and practitioners can determine what people should eat.

Instructor: **Popper**

Day: TBA Time: TBA

Enhancing the Immune System with Diet, Lifestyle and Nutraceuticals

Explore the world of the amazing human immune system, the ability to modify the expression of your genes through diet, lifestyle and nutritional supplementation, and the incredible scientific advancements in identifying underlying causes of illness and disease. Along the way you will learn how functional medicine and individualized nutritional therapy has revolutionized the way health problems are managed and how to take your health to a whole new level of optimal performance.

Instructor: **Palmer**

Day: TBA Time: TBA

Law

History of Law and Rights

This course provides a detail review of the origins of modern views on justice, law and rights from the dawn of history to the present.

Instructor: **Rigney**

Day: TBA Time: TBA

Biology

Bio-B

IPAK BIO 112/BIOLOGY B is a 15- week course in the fundamentals of Biological Sciences. This course is the second of two courses designed to teach the public the fundamentals of biology. IPAK BIO 111 and IPAK BIO 112 are prerequisites for courses in the Biology track offered by IPAK-EDU.

Instructor: **Lyons-Weiler**

Day: Tuesday Time: 11AM ET

The Biology of Immunology

Advanced, detailed study in immunology. Similar to 300- or 400-level instruction.

Instructor: **Lyons-Weiler**

Day: Thursday Time: 1PM ET

Marine Ecology and Conservation Biology

This course covers the ecosystems of our marine dominated planet. We begin with the the physical and chemical basis and then steer into the main groups of biological organisms encountered. Coverage continues with communities within each ecosystem, which include the intertidal zone, coral reefs, near shore marshes, open ocean, and the deep sea. The last section of the course covers conservation of these vital ecosystems, focusing on disruptions within and across ecosystems that lead to shifts in ecosystems functioning.

Instructor: **Stephen**

Day: TBA Time: TBA



Anatomy & Physiology B

Anatomy and Physiology courses 1 and 2 will cover every organ system in the human body, familiarizing the student with the structures and functions of cells, tissues, organs, and systems as well as how they interact with each other. Knowledge of normal anatomy (structure) and physiology (function) is the foundation for understanding how the body is expected to perform as well as the basis of understanding pathology (disease).

Instructor: **Liberty**

Day: TBA Time: TBA

Analytics

Applied Biostatistics

In this course, you will be introduced to the principles and practice of inferential statistics in action, including key principles of distributional assumptions, random samples, randomization, parametric and non-parametric statistical hypothesis testing, statistical power, measuring association & correlation, comparing means between two and among two or more populations, and introductory regression theory and practice.

Instructor: **Buns**

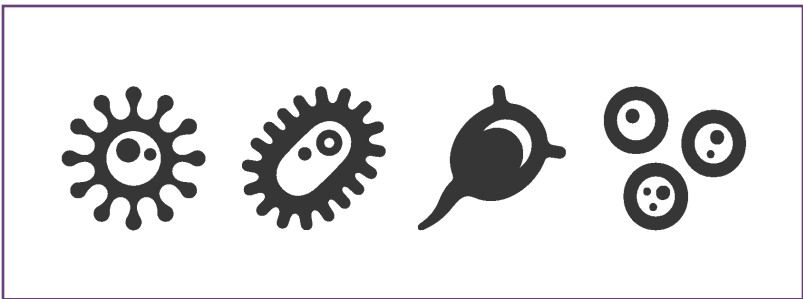
Day: TBA Time: TBA

How to Read and Interpret a Scientific Study

This course is designed to empower individuals to know the landscape and layout of scientific studies. Topics will include the basics like types of studies, how to find published studies and preprints, how to access supplemental material, what to expect to find in specific sections of a typical peer-reviewed study, including the abstract, introduction, materials and methods, results, discussion, acknowledgements, funding information, conflicts of interest, and citations; how to approach an author for access to data and software; how and why to respond to studies that are flawed and/or unethical. Course material will include case studies of specific publications – both well-done and flawed. The course will be a 2 hr per week experience, with pre-class assigned readings, videos, and lectures. Course assignments will include finding and critiquing specific types of studies. By the end of the course, students will be comfortable navigating the familiar territory of published scientific studies.

Instructor: **Lyons-Weiler**

Day: Thursday Time: 11AM ET



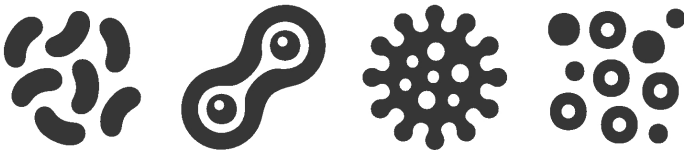
Health Studies

Herbology and Human Health

This course is designed to give health professionals and the health-conscious public reliable, practical training in the use of botanical medicine to improve and maintain health. Both traditional herbal practice and modern research will inform the topics covered in the course. Classes are taught by a range of expert clinical herbalists, published authors and researchers, and herbal scientists. Students will have the opportunity to ask questions during the live classes, and receive research studies or abstracts of research relevant to that topic. The course provides a foundational understanding of herbal medicine, and specific application of phytotherapy for specific health challenges.

Instructor: **Gaeta et al.**

Day: TBA Time: TBA



Wholistic Approaches to Human HEalth

In this course, students will learn about holistic medicine. Taught by a clinician, the student will learn how and why a holistic medical approach can provide the most satisfying results in medicine. The student will understand how to support the body's physiology and biochemistry to provide the best roadmap to achieve optimal health. Using natural therapies such as bioidenticals, natural hormones, vitamins, minerals, herbs, and detoxification can supply the body with the proper raw materials it needs to function optimally. Each topic will provide the student with the basic knowledge and the detailed intricacies of biochemistry and physiology in order to improve health. Students will engage in open discussion and Q&A following each presentation

Instructor: **Brownstein**

Day: Fridays Time: 3:30PM ET

Rational Drug and Vaccine Development

Students will learn the fundamentals of drug and vaccine safety through a series of live online presentations and discussions. This course will build on concepts from Dr. Lyons-Weiler's, Environmental Toxicology, but will be more narrowly focused. This course will prepare you to make logical evidence-based decisions and be well-informed for public discussion on these topics.

Instructor: **Carver**

Day: TBA Time: TBA

Integrative Mental Wellness

In this course, students will learn the latest research on nutritional deficiencies and the link to neurodevelopmental delays and mental health disorders.

Instructor: **Giustra-Kozek**

Day: TBA Time: TBA

Autoimmunity

This course will capitalize on mechanisms triggering the pathogenesis of autoimmune diseases. It will specifically focus on the role of self and non-self discrimination and how similarities between foreign and self-antigens favor activation of autoreactive T or B cells. It should help to better understand the importance of predisposing factors such as specific host genetics, exposure to microbiota or self-mimicking pathogen-associated motifs or superantigens, degeneracy of immune recognition and epigenetic re-programming of host immune cells. The clinical relevance of autoreactivity will be illustrate by means of a few examples (e.g., inflammatory bowel disease, diabetes mellitus type 1, ankylosing spondylitis)

Instructor: **Vanden Bossche**

Day: TBA Time: TBA

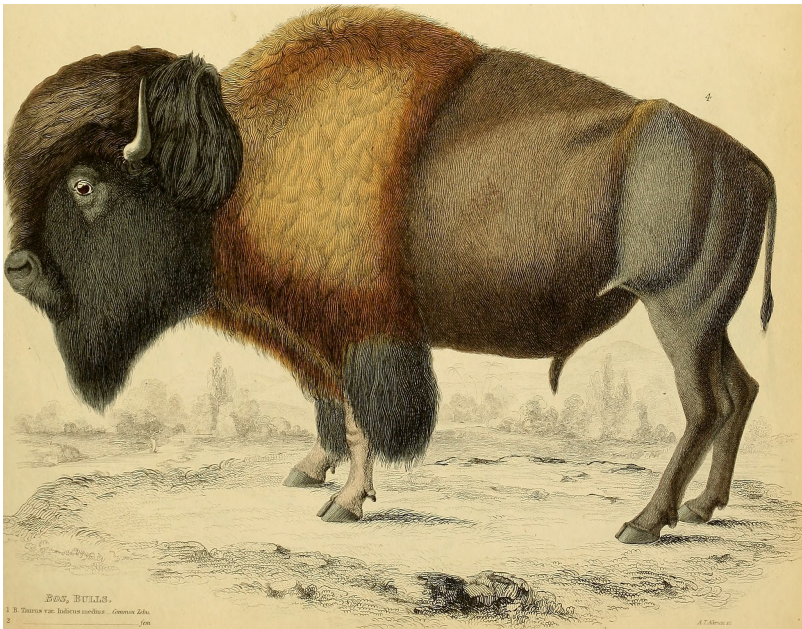
Humanities

Art, Ecology, and the Anthropocene

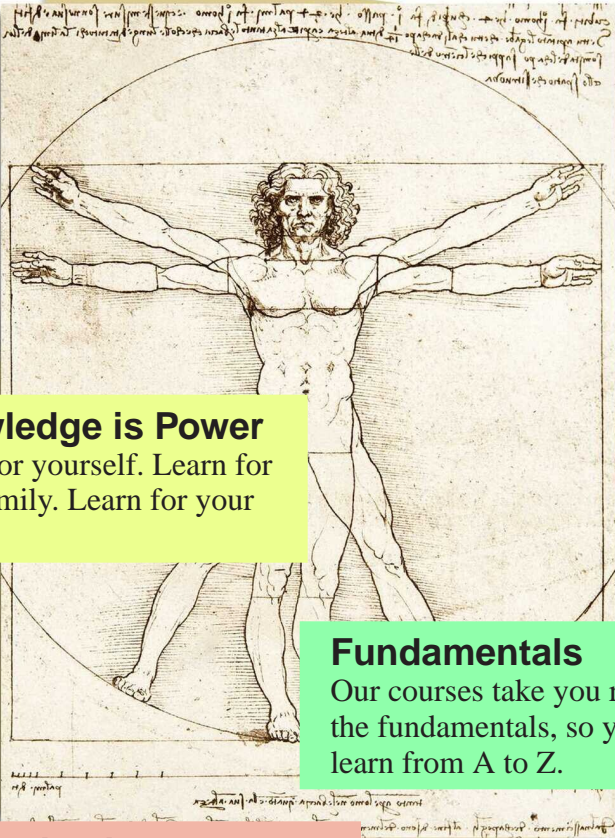
We will explore where we are, how we got to this point, and transformative strategies to impact our future. In doing so, we will consider different histories and theories related to aesthetics, ecology, and the Anthropocene and the significant and underrealized role of fast fashion and textile industry.

Instructor: **Skold**

Day: TBA Time: TBA



In today's world, knowledge is a force multiplier.



Knowledge is Power

Learn for yourself. Learn for your family. Learn for your society.

Fundamentals

Our courses take you right to the fundamentals, so you learn from A to Z.

Applications

Your educational experience will help you to transfer knowledge from one setting to the next.

Growth

As you grow, you will learn skills that allow you to leverage your knowledge in way to help improve society.

