

ELECTROMAGNETIC RADIATION SPECIALIST **PROSPECTUS**



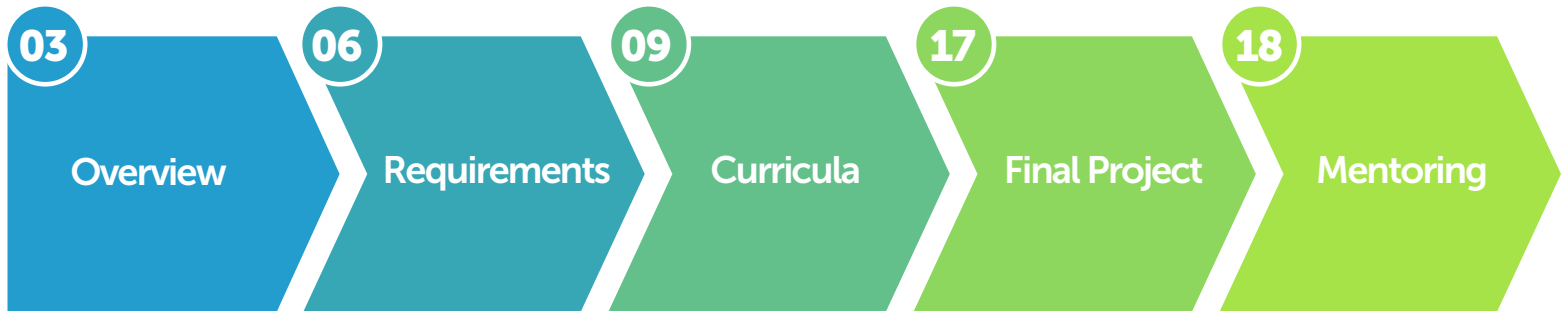
# EMRS CERTIFICATION

Technology & Design For Healthy Buildings



**Building Biology Institute**  
The science of healthy buildings

# CONTENTS



## CONTINUING EDUCATION CREDITS



*We are registered continuing education providers for the American Institute Of Architects,  
the Indoor Air Quality Association, and the International Association Of Certified Home Inspectors.*





## OVERVIEW

## A Holistic Education. A Healthier World.

Building Biology is an interdisciplinary science that brings together dynamic and visionary individuals to work for a better, more sustainable, and truly green world.

No other profession so seamlessly integrates the holistic study of the man-made built environment, human health, and ecology. From the German term “Baubiologie,” meaning “building for life,” Building Biology is founded on the principle of balance, using nature as the ultimate guide.

As extraordinary as our modern advances in science and technology may appear, they nonetheless disregard not just our natural environment, but also our human health. Synthetic materials, biological contaminants, and man-made pollutants break down the balance of nature that is essential and sustaining for all life.

***Building Biology strives to correct imbalance by implementing materials, methods, and protocols that support a built environment intrinsically aligned with nature.***

## Making A Difference

By understanding and applying the laws of nature to the built environment, Building Biologists are uniquely trained to become solution-oriented leaders and environmental advocates.

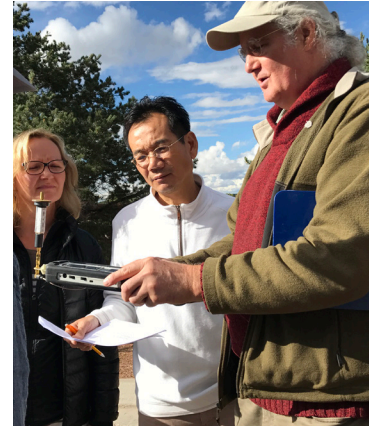
At the Building Biology Institute (BBI), we train our graduates to use the knowledge, tools, and skills they acquire during their course of study to actively assess and find solutions to the problems created from the misuse of chemistry and technology.

We teach our students to approach the built environment from a holistic standpoint, toward the overarching goal of greater harmony and planetary health for current and future generations.

## Mission

As Building Biologists, we strive to make the built environment healthier for all. Building Biology's guidelines serve to assure the life-enhancing nature of each dwelling space, with as little disruption to the environment as possible. By setting practical, real-world examples, and sharing solid recommendations based on the fundamental principles of Building Biology, we are making positive change on both an individual and global scale.

The Building Biology Institute's mission is to help create healthy homes, schools, and workplaces free of toxic indoor air, tap-water pollutants, and hazards posed by electromagnetic radiation. BBI was founded in Clearwater, Florida, 1987, based on the Principles of "Baubiologie," brought from Germany by the renowned international architect Helmut Ziehe.



***Actively assess and find solutions to the problems created from the misuse of chemistry and technology.***



Helmut Ziehe, *Founder*

# OUR GOALS

Achieve order and harmony with our surroundings.

Forge a balance between nature, buildings & ourselves.

Foster connections for an ecologically oriented world.

Provide a holistic approach to building with occupant wellbeing as the primary focus.

## Who Should Enroll?

Open to all, from working professionals to the general public, the EMRS program at the Building Biology Institute welcomes students from diverse careers, geographical locations, and educational backgrounds. Our alumni over the years have hailed from seventeen nations outside North America and ranged in age from sixteen to seventy-four.

Our impressive list of alumni includes architects, interior designers, indoor air quality consultants, home inspectors, healthcare practitioners, building science professionals, and home dwellers. We invite anyone who is interested in creating healthier dwellings and a healthier world to join us.

Building Biology Institute does not and shall not discriminate on the basis of race, color, religion (creed), gender, age, gender expression, national origin (ancestry), disability, marital status, sexual orientation, or military status, in any of its activities, events, or operations. We have been and remain committed to providing an inclusive and welcoming environment for all.



***We invite anyone who is interested in creating healthier dwellings and a healthier world to join us.***





# REQUIREMENTS

The foundation for certification.

## **Electromagnetic Radiation Specialist™ (EMRS)**

200 CONTINUING EDUCATION UNITS

Our EMRS Professional Certification thoroughly equips you with practical, real-world, hands-on experience to identify, assess, and mitigate electromagnetic radiation (EMR) in homes, schools, offices, and commercial spaces.

As technology continues to progress, both homeowners and builders face a growing challenge to create and maintain healthy, low-EMR buildings. Toward the goal of creating safe and healthy dwelling spaces, a nuanced comprehension of EMR, its integration in building systems, and its impact on occupants is now more important than ever. This is an expertise that will become particularly essential to human health and building health with the advent of smart homes and smart cities.

The EMRS program guides you to become an expert in EMR prevention, certified to advise homeowners, home buyers, architects, builders, inspectors, and engineers in the methods and practices that create and maintain a minimized presence of electromagnetic fields (EMF) in homes and commercial buildings. We concentrate on teaching you the skills needed to make a genuine positive impact in your community and in the world at large.

## What You Can Expect

Through our online courses, immersive seminars, interactive discussions, and mentored process, you will become an expert in the science, methods, and practices that create and maintain healthy, low-EMR buildings. As you learn from established leaders in the field of EMR prevention and mitigation, you will refine your understanding of EMR fundamentals, the physics of energy, the use of metering instrumentation, the various forms of shielding and blocking materials, and how this all fits into the grand picture of building science and occupant health.

Our students have a drive to impact real and positive change in the world, creating holistically healthy environments and buildings so individuals and communities can thrive. The EMRS program grants a solid educational foundation and platform for you to meet these professional goals.

# REQUIREMENTS

**IBE 101: Natural Healthy Buildings**

**Signed BBI Ethics Statement**

**(12) 200-level online courses + exams**

**(3) 5-Day Intensive Seminars + Exams (IBE 212, 213, 312)**

**Final Project (IBE 221)**

## Alumni

Many of BBI's alumni now own and manage successful environmental businesses based on their carefully honed Building Biology expertise. A large percentage of those who have obtained our EMRS Certification have continued on to run flourishing businesses as EMF/EMR consultants, as well as safe technology advocates.

BBI's impressive list of alumni also includes architects, green builders, engineers, building inspectors, medical practitioners, interior designers, and city planners who have used their certifications to expand their careers and credentials.

## Timing

IBE 101, our 3 intensive seminars, and our online courses are designed to be taken in any order, with the exception of IBE 212, which is a prerequisite for IBE 312. We recommend that you take IBE 101: Natural Healthy Buildings before attending your first 5-day seminar. All required curricula must be completed successfully before a candidate may undertake their BBEC Final Project.

You have up to two years to complete the entire program. Most students complete the entire track within one year. Requests for extensions are considered on an individual basis.

Pay In Advance & Save: \$5,355\*

Pay as You Go: \$7,070\*

You may pay as you study, enrolling in seminars and courses as your funds allow, or save \$1,715 off your entire tuition by paying up front for the full certification track.

\* Tuition includes all online courses, seminars, and final mentored project.

## Multiple Professional Certifications

If you are interested in double or triple certification: BBEC, EMRS & BBNC, (a path taken by many of our alumni and students), please reach out to us at [outreach@buildingbiologyinstitute.org](mailto:outreach@buildingbiologyinstitute.org). Significant tuition discounts are available for students working on multiple certifications.

**BBEC**

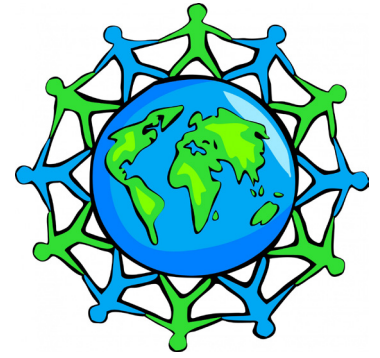
Building Biology  
Environmental Consultant

**EMRS**

Electromagnetic  
Radiation Specialist

**BBNC**

Building Biology  
New-Build Consultant



*We look forward to welcoming you into our international community!*



*Consider proportion, harmonic measure, order and shape in design.*

BUILDING BIOLOGY

PRINCIPLE #21





# CURRICULA

Introducing our courses.

## **IBE 101: Natural Healthy Buildings**

This foundational course addresses the vital interconnections among the built environment, human health, and planetary ecology. It lays a solid groundwork that prepares you to Go Beyond Green™, meeting the urgent call for sustainable dwellings and spaces designed and built with nature as the gold standard.

IBE 101: Natural Healthy Buildings is a mentored, self-study, introductory course to the principles of Building Biology. It is intended to be completed entirely in your home or office, at your convenience. Your mentor will be available to you daily throughout your studies, via phone and e-mail, to assist you in learning how to detect and mitigate, and/or prevent the many environmental hazards found in homes, offices, schools, and commercial buildings.

Students will learn what kinds of hazards a house or office may contain, how to detect them, what to do about them, and best of all, how not to cause them. This course benefits home dwellers, as well as architects, interior designers and other building professionals.



**When you enroll, you will receive the following materials:**

- Course Manual
- Study Progress Sheet
- IBE Code Of Ethics (Signature Required)
- Standard Of Building Biology Testing Methods
- Introductory Gaussmeter
- Radon Test Kit
- Water Test Kit
- Prescriptions For A Healthy House
- 7 Steps To Improving Air Quality
- Creating A Sleeping Sanctuary

## Intensive Seminars

Learn from some of the top indoor environmental and electromagnetic radiation professionals, with lively classroom sessions, interactive onsite training, and real-world applications. BBI's seminar instructors and guest lecturers are some of the leading experts in their respective fields. Our three 5-day immersive seminars offer students the unique opportunity for hands-on learning and networking with colleagues, thought leaders, and skilled EMR experts.

## Field Trips

Field trips aren't just for kids. Take your knowledge outside of the classroom and into the real world. During IBE 213 Building Physics/Building Biology, you will take a field trip with your class to onsite locations for experiential learning by visiting homes built according to Building Biology principles. Trips are guided by certified class instructors.



***"We shape our dwellings,  
and afterwards, our  
dwellings shape us."***

WINSTON CHURCHILL



***Instructor Rob Metzinger  
addressing over 300  
medical doctors and  
other healthcare  
professionals at  
conference focused  
on electromagnetic  
radiation.***



## Venue

BBEC seminars are all held at the beautiful and inspiring IHM Retreat & Conference Center Santa Fe, New Mexico. BBI makes every effort to ensure that the classroom, dining room, commons areas, and overnight guest rooms at the IHM Retreat & Conference Center meet Building Biology Standards for a health-supporting environment. The venue's management team joins us in our efforts. Check out our venue at [www.ihmretreat.com](http://www.ihmretreat.com)

Meals are prepared by Piñon Catering, served buffet style, and can accommodate nearly all dietary requirements. Foods are healthy, prepared fresh with organic ingredients whenever possible, and delicious.

Ask questions. Get answers. With ample time set aside for questions and discussion, the last morning of each seminar is dedicated to Q&A sessions and an oral review of the course material. Each seminar concludes with a proctored written exam.

## Seminar Requirements

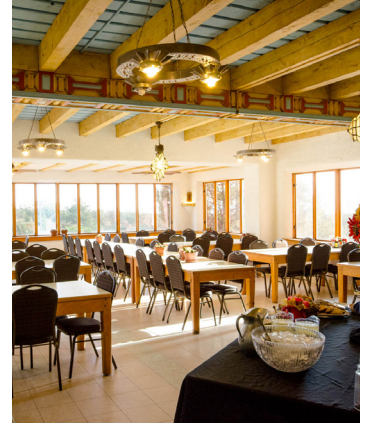
Required seminars for Building Biology certification:

- IBE 212: Electromagnetic Radiation (EMR)**
- IBE 213: Building Physics/Building Biology**
- IBE 312: Advanced EMR**

*\*IBE 212 must be completed before IBE 312.*

Students enrolled in BBI's professional certification tracks (BBNC, BBEC, and/or EMRS) will present their own case study reports as part of the final project toward professional certification.

Read about our seminars, course syllabi, and instructors at [buildingbiologyinstitute.org/seminars](http://buildingbiologyinstitute.org/seminars)



***On-site dining room serves nutritious meals and seats 75 at a time.***



***Spacious, comfortable rooms have private baths and radiant heat.***

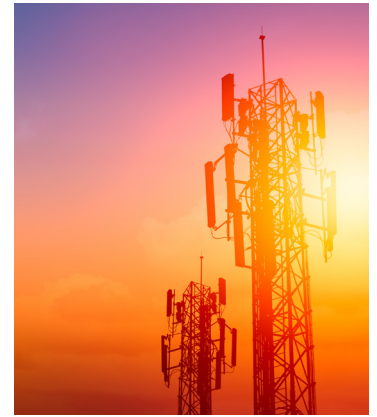


***3 daily meals are prepared from scratch, with selections for all dietary requirements.***

## IBE 212: Electromagnetic Radiation

We are seeing an exponential rise in man-made electromagnetic radiation (EMR) in today's technology-driven world. From powerlines and cell towers to wireless devices and smart meters, EMR is pervasive in our homes, workplaces, and public spaces. Unfortunately, EMR is also a key environmental factor in contributing to negative health effects.

This course will cover the basic science of electromagnetic fields (EMFs), reviewing terminology, common sources, and the physics of energy. Students will also learn techniques for measuring and mitigating EMR, with particular emphasis on EMR in the bedroom. Practical examples and case studies are presented, with real-world applications. Students "learn by doing" in a lab environment, and introduced to the instruments and procedures for detection, assessment, mitigation, and abatement planning.



***When an activity raises threats of harm... precautionary measures should be taken.***

THE PRECAUTIONARY PRINCIPLE

## TOPICS COVERED

**Indoor electro-climate environment** and the connections between EMFs and human health.

**Physics of energy**, including steady-state (DC) electric and magnetic fields; power system (AC) electric and magnetic fields; power system microsurge electrical pollution; radiofrequency (RF) radiation and wireless devices; and ionizing radiation.

**BBI protocols and standards** to investigate electro-climate factors, including instrumentation usage, data analysis and solutions, and mitigation methodologies.

**Controlling and avoiding EMFs** to improve and support the natural health of a building and its occupants.

**Educating and assisting clients** to create a healthier home that is equal parts biologically effective, technically sound, and aesthetically acceptable.

Prerequisite online course: 212.1 Electromagnetic Radiation

## IBE 312: Advanced Electromagnetic Radiation

This intensive course amplifies the knowledge of EMR measurement and remediation techniques learned in IBE 212. With more in-depth information on power system magnetic and electric fields, power system VLF fields, and radiofrequency radiation, along with emerging issues in the everchanging wireless communication landscape, fully explores EMR remediation techniques, materials, planning, cost estimates, and installation.

Along with use of basic instrumentation to assess environments for EMR, advanced measurement techniques and instrumentation will be introduced. The IBE Protocol for Measurement of Non-ionizing EMR in Low Rise Residential Buildings will be used as a guide for measuring techniques.

While new concepts and instrumentation will be introduced during a standard lecture format, the majority of this seminar is heavily devoted to hands-on lab work in a team setting. Using basic and advanced equipment, you will assess realistic environments and models specifically constructed to simulate typical EMR problems found in buildings. Team members will discuss findings and produce remediation plans to be shared with the other teams during debriefing sessions.

### TOPICS COVERED

**Measuring EMR in low-rise buildings:** power system ELF magnetic and electric fields, power system VLF electric fields, and radiofrequency radiation (RF).

**Metering & instrumentation for measuring specific EMR:** practice using meters to measure and map EMR in buildings; including data logging and its use in assessment.

**Become familiar with the IBE Protocol:** measurement of Non-ionizing EMR in Low Rise Residential Buildings.

**Methods of shielding and blocking specific EMR,** including the application criteria for each type of shielding.

**How to develop a plan and estimate cost** for remediating each type of EMR in a low-rise building.

*Daily schedule includes lectures and group activities, along with practical experience in building science principles, research assignments, demonstrations, and interactive discussions.*

*Prerequisite seminar: IBE 212 must be completed successfully before you enroll in IBE 312.*



# TOPICS COVERED

## IBE 213: Building Physics/ Building Biology

This 5-day seminar explores the layered connections between human health, the built environment, and planetary ecology. Students will gain vital insights into the dynamic interaction between the climate, the built environment, and the impact of that built environment upon the occupant and the ecosystem.

*“The Buildings in which we live, work, and play are designed to protect us from Nature’s extremes, yet they also affect our health and environment in countless ways.”*

JÖRN SCHRÖDER, BBEC

**Design and construction strategies** to avoid incurring common indoor environmental hazards in the workplace and home.

**Best practices** to create optimal health conditions during construction and/or remodeling and throughout the lifecycle of a building.

**Available, and often economical, solutions** to rectify known problems.

**Application of Building Physics** with human health as the primary focus.

**Key facets of Building Physics** including the building envelope, building materials, furnishings, building technologies, and the building system.

*Daily schedule includes lectures and group activities, along with practical experience in building science principles, research assignments, demonstrations, and interactive discussions.*



## IBE 200-Level Online Courses

Centered around the 25 founding principles of Building Biology, these 12 self-directed, home study courses round off your BBEC education. Subject categories range from site and community design to occupant health and well-being; and from natural and man-made electromagnetic radiation safety to environmental protection and social responsibility. These online courses offer in-depth topical analysis of the key tenets of Building Biology, enhancing your knowledge and preparing you for professional work in the field. Each course concludes with a required online examination, after which you can download a certificate of completion. *200-Level online courses may be taken in any order.*

<b>IBE 221.1</b>	Dirty Electricity
<b>IBE 221.3</b>	Smart Meters
<b>IBE 221.4</b>	5G Cellular Phone Systems
<b>IBE 212.5</b>	Photovoltaic (PV) Systems
<b>IBE 212.1</b>	Electromagnetic Radiation
<b>IBE 221.12</b>	The Human Response to Light
<b>IBE 221.13</b>	Electric Lighting: Options & Health Impacts
<b>IBE 223.9</b>	Electrical Home Wiring
<b>IBE 221.11</b>	Baby Monitors
<b>IBE 223.3</b>	Community Planning: Cities in Crisis
<b>IBE 223.4</b>	Community Planning: Exemplary Case Studies
<b>IBE 223.5</b>	Community Planning: Incorporating Building Biology



## FINAL PROJECT

### The Mentored Process

#### IBE 221: Final Project

A Final Project is a practical assignment that brings together all testing protocols, data interpretation, analysis methodologies, home designs, materials, and instruments from your coursework and studies. You will have 3 months from inception to complete and submit your project.

The Final Project is a mentored process. BBI will match you with a senior BBEC who will serve as your mentor, based on your stated goals and your mentor's established skills.

***"Electromagnetic fields are an emerging public health crisis that will go down in history as one of the most important mistakes made in the name of progress."***

CAMILLA REES, MBA



## The Mentored Process

Under your mentor's close guidance, you will take your comprehensive knowledge and skills directly into the field to perform a home assessment, write a report of your findings, and prove your proficiency in all aspects of the Building Biology Assessment protocol.

*Note: The final project only requires a home assessment, not a mitigation. Should you discover the need for mitigation during your assessment, please reach out to a certified BBEC.*

The topics your Final Project explores will include: low and high EMF frequency ranges, including radiofrequency and cellular phone signals, static electric and magnetic fields, volatile organic compounds (VOC's), pesticides, combustion gases, water pollution, dust and particulates, environmental stressors.



**Get hands-on training in proper instrumentation use and interpretation of results.**

1

Announce your readiness and request a mentor.

2

Draft a home assessment strategy proposal.

3

Submit draft to your mentor for review.

4

Upon approval, conduct a BBEC home assessment.

5

Develop a report including photos, results & mitigation suggestions.

6

Submit report to BBI for final review.

Contact Us To Enroll  
Or For More Information

**(866) 960 0333**

**[outreach@buildingbiologyinstitute.org](mailto:outreach@buildingbiologyinstitute.org)**



**Building Biology Institute**  
The science of healthy buildings

*The Building Biology Institute (BBI) is a 501(c)(3) nonprofit organization dedicated to educating both professionals and the general public about how to create healthy homes, schools, and workplaces.*