EMRS Certification

Electromagnetic Radiation Specialist

Bringing together technology and design methods to provide the information needed to create healthy homes and workplaces

Building Biology Institute
The science of healthy buildings

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We are a registered continuing education credit provider for the American Institute Of Architects, Indoor Air Quality Association, and the International Association of Certified Home Inspectors.

Building Biology Institute
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Building Biologists:

A Building Biologist is an environmental advocate in the global effort to solve with an holistic approach the problems that arise from modern building and settlement planning methods—methods that disregard nature and human culture. It is, after all, the unaware human beings who create environmental problems, and only by understanding and applying natural laws can Building-biologists lead others.

A Building-biologist is really a researcher, architect, engineer, and doctor, all in one. Building-biology offers a preventative and healing medicine with profound unifying influence. This is a creative, harmonizing discipline, and calls for dynamic, idealistic people.

To work for a better and more sustainable and truly "green" world is an extraordinary, valued, necessary, and satisfying job. The goal is:

- to regain order and harmony in our surroundings
- to restore the balance between nature, our buildings, and ourselves
- to help build bridges for the realization of a world that is ecologically oriented
- Building-Biology provides a holistic approach to healthy homes and workplaces while always maintaining people, the building's occupants, as its focus.

As Building Biologists, we might not be able to change very much the present impersonal ways of building and living, as economically oriented and entrenched as they are. But if we set sterling examples and give solid advice, based on Building Biological Principles, we *will* make a difference. We can be satisfied ethically with our performance, having participated in changing things to the better, hoping that destiny will do the rest.

Electromagnetic Radiation Specialist Certification (EMRS)*

This program will equip you with practical, in-depth, hands-on experience and real-world solutions for identifying, assessing, and mitigating or eliminating electromagnetic emissions (EMR, EMFs) in homes, schools, offices and commercial buildings. You will also become an expert in 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 in homes and commercial buildings. Throughout the program we will concentrate on teaching you the skills needed to make a genuine positive impact in your community and in the world at large.

IBE alumni who are certified BBECs (Building Biology Environmental Consultants) or BBEIs (Building Biology Environmental Inspectors) and wish to pursue EMRS certification, need complete our Advanced Electromagnetic Radiation seminar, IBE 312, and the additional required online courses.

Requirements for Certification* (an overview):

1. Successfully complete our mentored correspondence course: IBE 101
2. Successfully complete a battery of 200-level online courses
3. Successfully complete three 5-day seminars: IBE 212 Electromagnetic Radiation, IBE 312 Advanced Electromagnetic Radiation, IBE 213 Natural Healthy Building & Remodeling Practices
4. Successful completion of a Final Project
5. Sign and submit the IBE ethics statement
6. Beginning two years from the date of your certification, and every two years thereafter, show proof of your ongoing education in the field, via 40 CEUs
7. Maintain IBE membership (Basic or Advanced) in good standing

**IBE 101, our three BBEC seminars, and required online courses are designed to be taken in any order. 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 program (requests for extensions are considered individually)*

Seminars: IBE 212, IBE 213, IBE 312

IBE seminar instructors and guest lecturers are all accomplished indoor environmental experts. A portion of each 200-level seminar is devoted to a field trip, guided by certified instructors. On the fifth morning, there is a Q&A and an oral review of the previous four days' material, followed in the afternoon by a proctored written exam. Seminar Syllabi, including instructor bios, can be found on the seminar pages of our website, available for download. Each 5-day seminar is staged once per calendar year.

Students enrolled in the Building Biology Professional Certification tracks (BBNC, BBEC, and/or EMRS) will present reports of their own case studies as their Final Project toward Professional Certification.

Seminar: IBE 212 Electromagnetic Radiation:

This 5-day seminar is comprised of lectures, instructor- led discussions, instrumentation familiarization labs, measurement labs followed by application in a building evaluation using these instruments. You will learn about the physical nature of these radiations and the reported health effects from these radiations.

You will explore real-world practical solutions for detecting and identifying these man-made electromagnetic emissions. They include power system ELF magnetic and electric fields, power system VLF Fields and wireless radio frequency radiations emitted by cell phones, cordless phones, WiFi and other wireless devices.

You will learn the testing protocols and the IBE Sleeping Room Standards used to investigate and rate the electro-climate in homes and other buildings. You will learn about practical remediation methods to address these emissions.

Topics include:

- Fundamental definitions of energy and how electricity is a special class of energy
- Concepts of AC electric and AC magnetic fields
- EMF low and high frequency ranges including radio frequency and cellular phone
- Definition of AC electric and magnetic fields and DC electric and magnetic fields
- Ionizing radiation
- Static electric and magnetic fields

Prerequisite online course: 212.1 Electromagnetic Radiation

Seminar: IBE 312 Advanced Electromagnetic Radiation:

This advanced seminar has a minimum of lecture and a maximum of lab and practical experiences to allow you develop your skills set for best measurement practices, remediation planning and remediation costing. Emerging issues in the ever-changing wireless communication landscape will be discussed.

You will receive a copy of the new IBE Standard Measurement of Non-ionizing Electromagnetic Radiation (EMR) in Low-Rise Residential Buildings. The measurement

practices covered in this standard will be used throughout the four days. The seminar will cover the proper identification and mitigation of man-made electromagnetic energies to include power system ELF magnetic and electric fields, power system VLF Fields and wireless radio frequency radiations emitted by cell phones, cordless phones, WiFi and other wireless devices.

Daily classroom experiences will feature comprehensive hands-on learning with the latest lab equipment.

Please note: IBE 212 must be completed successfully before you enroll in IBE 312.

IBE 213: Building Physics/Building Biology:
(understanding the physics of building**):**

Building Biology is a specialized branch of Building Science. The 25 governing principles of Building Biology inform a holistic approach to the interrelationships between the health of the built environment, its occupants and our planetary ecology. Students learn design and construction strategies so as to avoid incurring the indoor environmental hazards so common in existing homes and workplaces; and to create optimal health conditions during construction and/or remodeling and throughout the life of the building. Additionally, students learn about available, and often economical, solutions to rectify known problems.

Topics include:

- Environmental situation and the unique Building Biology perspective
- Building Physics
- Building-Biology a broader view of the application of Building Physics with human health as the focus
- The Building Envelope: Biologically-sound building materials and strategies
- Building Technologies: alternatives for heating, cooling venting and plumbing.

IBE 101, Natural Healthy Buildings:

This Home Study Course introduces the 25 Principles of Building-Biology®. You 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. A senior BBEC who will be assigned as your mentor for this course, and be accessible via e-mail and phone.
Topics include:

- Environmental situation
- Building-Biology and building culture
- Biologically-sound building materials
- Construction and building methods
- Heating and thermal insulation
- Water and water pollutants
- Air and air pollutants
- Electro-climate issues

Most students complete this course within two to three months of enrollment.

IBE 200-level Online Courses:

The following are self-directed home-study courses. Each course includes an online

exam, which you must complete successfully. As you complete each exam, you will be presented with the opportunity to download a certificate of completion; or you may return to the course at a later date to download your certificate (detailed, illustrated instructions on how to download your certificates is available for download on our website's Map of Courses page). Please note that your online student profile will not reflect that you completed each course until you have downloaded the certificate (our website then credits you automatically).

IBE 221.2	Dirty Electricity
IBE 221.3	Smart Meters
IBE 221.4	5G Cellular Phone Systems
IBE 221.5	Photovoltaic (PV) Systems
IBE 212.1	Electromagnetic Radiation
IBE 221.12	The Human Response to Light
IBE 221.13	Electric Lighting: Options & Health Impacts
IBE 223.9	Electrical Home Wiring
IBE 221.11	Baby Monitors
IBE 223.3	Community Planning: Cities in Crisis
IBE 223.4	Community Planning: Exemplary Case Studies
IBE 223.5	Community Planning: Incorporating Building Biology

Final Project:

You will conduct a sample home assessment, and write a report of your findings. During this process you will work closely with a senior EMRS, who will mentor you through the process. The focus of this project is for you to demonstrate your thorough understanding of how to perform a home assessment—not a mitigation—and prove your proficiency in all aspects of the Building Biology Assessment protocol. Should you discover the need for mitigation, you should reach out to a certified EMRS; your instructor can advise you in this. You may not use your own home as the basis of your assessment.

The steps to begin and successfully complete your Final Project:

1. Announce your readiness to IBE, and request that a mentor be assigned to you
2. Draft a home assessment strategy proposal according to Building-Biology protocols
3. Submit your draft to your assigned mentor, who will review it for accuracy and thoroughness.
4. Upon your mentor's approval of the draft, conduct a BBEC Assessment of a home
5. Develop a written report including photos, results and mitigation suggestions.
6. Submit the report to IBE. Your will review the report and approve it, or contact you to discuss it.

IBE will provide you with a sample assessment report.

Note: At this point, you will not yet be a certified EMRS; you must not present yourself as such, and do not charge for your service should you opt to assess someone else's

home.

We have modeled our courses on the Distance Educational Training Course (DETC) standards to provide you with an informative and enjoyable learning experience.