

## The Effect of the Magnetic Field on Students' Concentration: A Design Studio at IAU as a Case Study

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### **Abstract:**

There are no design standards related to exposure to magnetic fields or health legislation in Saudi Arabia. The main purpose of this research is to create an architectural perception of educational buildings, according to occupants' physical and psychological status, in terms of their exposure to magnetic fields. This study aimed to evaluate the mental and health condition of a design studio students, in one of the educational institutions through a quantitative aspect. The magnetic fields were measured using an accurate earth magnetometer and a cell phone application. A simple medical device was used to measure the students' heart rate and arterial oxygen saturation. Moreover, a questionnaire was used to assess the students' concentration after their stay inside the design studio for a certain time. The study reveals a significant direct relation between magnetic values and both students' concentration and their arterial oxygen saturation. While is no clear evidence of mediating factors between magnetic values and students' concentration. The findings contribute to a broader understanding of how magnetic fields can interact with students' concentration, and thus in the architectural educational process.

### **Keywords:**

Magnetic field, Students' concentration, Vital signs, Learning spaces.