

# Statement of Purpose

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I want to pursue M.Sc. in Physics, and my career aspiration is to become a professor. I would like to go for PhD after completing M.Sc. and my research interest inclines towards **Quantum Gravity** and **Theoretical High Energy Physics**

Physics is a subject that explains phenomena occurring in everyday life and tries to answer questions regarding to nature of reality; nature of time and fate of the universe. It also incorporates already known theories for industrial research. I am more interested in regarding researches regarding nature of reality or space and time. So; I would like to pursue PhD from European or US Universities or join joint PhD programs that IIT Kharagpur hosts with other world class universities.

I had around 7 GPA in 1<sup>st</sup> Year. After Covid lockdown in 2019; I tried solving previous year Olympiad questions and my grasp in subject started improving. I got 8.5 GPA in 5<sup>th</sup> and 6<sup>th</sup> sem which shows I have better grasp in Quantum Mechanics; Statistical Mechanics. My favourite subjects include Thermodynamics; Quantum Mechanics; and Relativity. I was able to derive De- Broglie relationship while on holiday in class 8<sup>th</sup>. Further while trying to analyze that light took 500 seconds while coming to earth meant that we were seeing their past while we were ourselves in present and vice versa gave rise to a thought that Past, Present and future were simultaneously present. I was able to grasp the idea of block universe. These all ideas stand nowhere as compared to what other scientists were able to think at their time. But at least there is some scope of research inside me.

I had got HSEB scholarship while studying 11<sup>th</sup> in Nepal but got into depression due to Thyroid dysfunction. So; after getting it treated, I again got scholarship from Indian Embassy in Nepal while in 8<sup>th</sup>- 9<sup>th</sup> months in class 11<sup>th</sup> in Nepal and went to APS. I had not so good score in class 12<sup>th</sup> in Physics but it started improving after 4<sup>th</sup> semester because I was solving some previous year Physics Olympiad questions with other harder problems of physics.

Further attending some of the seminars had broadened my mind. As it was lockdown due to COVID-19; I undertook some virtual seminars on dark matter; gravitational waves; cosmology; and quantum gravity. Some talks were delivered by Dr. Shiraz Minwalla, Dr. Sunil Mukhi. Others I attended were from KITP online and IIT-GN virtual seminars. The researches going on these areas interested me a lot. I came to know of space and time changing dimensions in black hole. I came across many such interesting ideas while attending such seminars.

IIT Kharagpur offers good M.Sc. program. It has great researchers in my field of interests too. I would like to join this premier institute for my M.Sc. studies. I am suited for this college because my grasp of physics has rather been improving. I had more score in quantum mechanics; statistical mechanics; atomic physics; all of which are in 5<sup>th</sup> or 6<sup>th</sup> semester and is considered to be tougher than it was in class 12<sup>th</sup>. I would also like to gain some research experience under professor working in String Theory(first preference) or Theoretical HEP(second preference). As I have scope of research and my grasp in physics has increased gradually; I am suitable student for this course.