

POSSIBLE WRITTEN PROJECT IDEAS

MATH 241

MATHEMATICS

1. Riemann Zeta function. (Complex analysis)
2. Fundamental group. (Complex analysis)
3. Picard Theorem. (Complex analysis)
4. Modular form. (Complex analysis)

PHYSICS

1. Heisenberg's uncertainty principle. (Complex analysis)
2. Schrodinger equation. (Complex analysis, PDE)
3. Wick rotation, imaginary time. (Complex analysis)

ELECTRICAL ENGINEERING

1. AC circuits. (Complex analysis)
2. Audio signal processing. (Fourier)
3. Computer graphics. (Fourier)
4. Data compression. (Fourier)

BIOENGINEERING

1. Reaction-diffusion systems. (PDE)
2. Fisher's equation. (PDE)

FINANCE

1. Black-Scholes formula. (PDE)

SYSTEMS ENGINEERING

1. Nyquist stability criterion. (Complex analysis)

MECHANICAL ENGINEERING

1. Harmonic functions' application in robotics. (Complex analysis, PDE)