# Optimization Techniques - Web course

## COURSE OUTLINE

1. Nonlinear programming
2. Geometric programming
3. Dynamic programming
4. Search Techniques:
   - One dimensional Search Methods
   - Unconstrained Multi-dimensional Search Methods
   - Constrained Multi-dimensional Search Methods.

## COURSE DETAIL

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Topic/s</th>
<th>Lectures</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Nonlinear programming</strong> : Convex sets and convex functions, Kuhn-Tucker conditions. Convex quadratic programming: Wolfe's and Pivot complementary algorithms. Separable programming</td>
<td>12</td>
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<td>2</td>
<td><strong>Geometric programming</strong> : Problems with positive coefficients up to one degree of difficulty, Generalized method for the positive and negative coefficients</td>
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<td>3</td>
<td><strong>Dynamic programming</strong> : Discrete and continuous dynamic programming(simple illustrations).</td>
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<td>4</td>
<td><strong>Search Techniques</strong> :</td>
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<td><strong>One dimensional Search Methods</strong> : Unimodal functions, imultaneous uniform search method, Sequential search method, Fibonacci search method, Golden section search method.</td>
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<td><strong>Unconstrained Multi-dimensional Search Methods</strong> :</td>
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<td>Univariate search method, Method of steepest descent, Conjugate radient method, Fletcher Reeves method,</td>
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<td><strong>Constrained Multi-dimensional Search Methods</strong> :</td>
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<td>Rosen's Gradient projection method, Penalty function method.</td>
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## References:


## Pre-requisites:

Linear Programming

## Additional Reading:


## Hyperlinks:

- [books.google.co.in](books.google.co.in)

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