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Bibliografía actualizada de
matemáticas (licenciatura)

Alfinio Flores Peñafiel

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BIBLIOGRAFIA ACTUALIZADA DE MATEMATICAS (LICENCIATURA)

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BIBLIOGRAFIA ACTUALIZADA DE MATEMATICAS (LICENCIATURA)

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Introducción

La Bibliografía Actualizada de Matemáticas (Licenciatura) tiene como finalidad servir de orientación en la formación y actualización de acervos bibliográficos para las instituciones que ofrecen licenciatura en matemáticas, o aquellas que ofrecen carreras como las ingenierías, donde las matemáticas son una herramienta importante, o aquellas que preparan profesores de matemáticas.

La presente lista de libros es una actualización y complemento de la Bibliografía de Matemáticas Nivel Licenciatura [Flores y García, 1987]. En dicha bibliografía se decidió listar los libros que son clásicos en su rama, muchos de los cuales se encuentran todavía en circulación y algunos incluso han sido traducidos al español.

En la presente bibliografía se incorporan los libros nuevos y las más recientes reediciones o reimpressiones, aparecidos esencialmente de 1982 a la fecha, aunque se listan también algunos de años anteriores que se nos escaparon en la Bibliografía de Matemáticas Nivel Licenciatura.

Para esta actualización se consultaron las reseñas telegráficas del American Mathematical Monthly, reseñas de otras revistas especializadas, referencias de libros, y listas de libros elaboradas por asociaciones profesionales. En general no aparece ningún libro que no haya sido recomendado explícitamente por alguien calificado (distinto del autor del libro y de la editorial), es decir la mera descripción y elogio de un libro en un catálogo no es razón para incluirlo.

Esta lista sirve no sólo como complemento de la Bibliografía de Matemáticas Nivel Licenciatura, sino también de otras listas de libros de matemáticas, como las que aparecen en las referencias.

Esta lista se verá enriquecida con las sugerencias que haga el medio matemático de cuáles otros libros incluir en las distintas áreas.

Estructura de la bibliografía

La presente bibliografía se divide en cuatro partes:

- 1 General
- 2 Matemáticas puras
- 3 Matemáticas aplicadas
- 4 Enseñanza de las matemáticas

A su vez cada una está dividida como sigue:

1 GENERAL

- 1.0 Obras de consulta
- 1.1 Exposición, lecturas.

- 1.2 Historia
- 1.3 Biografía.
- 1.4 Papel de las matemáticas.
- 1.5 Naturaleza de las matemáticas.
- 1.6 Miscelánea, problemas, recreación.

2 MATEMÁTICAS PURAS

2.1 Fundamentos.

- 2.1.1 General
- 2.1.2 Lógica
- 2.1.3 Teoría de conjuntos
- 2.1.4 Otros

2.2 Matemática combinatoria.

- 2.2.1 Matemática finita
- 2.2.2 Combinatoria
- 2.2.3 Gráficas
- 2.2.4 Latices

2.3 Teoría de números.

- 2.3.1 Historia
- 2.3.2 Lecturas
- 2.3.3 Introdutorio
- 2.3.4 Intermedio
- 2.3.5 Temas especiales

2.4 Álgebra lineal.

- 2.4.1 Elemental
- 2.4.2 Intermedio
- 2.4.3 Avanzado

2.5 Álgebra.

- 2.5.1 General
- 2.5.2 Grupos
- 2.5.3 Anillos e ideales
- 2.5.4 Campos
- 2.5.5 Categorías

2.6 Cálculo.

- 2.6.0 Precálculo
- 2.6.1 Historia
- 2.6.2 Elemental
- 2.6.3 Intermedio
- 2.6.4 Avanzado

2.7 Análisis.

- 2.7.1 General
- 2.7.2 Sistemas numéricos
- 2.7.3 Análisis real
- 2.7.4 Análisis complejo
- 2.7.5 Ecuaciones diferenciales ordinarias

- 2.7.6 Ecuaciones diferenciales parciales
- 2.7.7 Series
- 2.7.8 Análisis de Fourier
- 2.7.9 Análisis funcional
- 2.7.10 Cálculo de variaciones
- 2.7.11 Control óptimo

2.8 Geometría.

- 2.8.0 Geometría analítica
- 2.8.1 Historia
- 2.8.2 Fundamentos
- 2.8.3 Figuras geométricas
- 2.8.4 Geometría no euclídea
- 2.8.5 Geometría proyectiva
- 2.8.6 Geometría vectorial
- 2.8.7 Geometría de transformaciones
- 2.8.8 Geometría vía álgebra lineal
- 2.8.9 Geometría algebraica
- 2.8.10 Geometría diferencial

2.9 Topología.

- 2.9.1 Enfoques intuitivos
- 2.9.2 Topología general
- 2.9.3 Topología algebraica
- 2.9.4 Topología diferencial
- 2.9.5 Otros

3 MATEMÁTICAS APLICADAS

3.1 Probabilidad

- 3.1.1 Historia.
- 3.1.2 Fundamentos.
- 3.1.3 Elemental.
- 3.1.4 Intermedio.
- 3.1.5 Avanzado.

3.2 Estadística.

- 3.2.1 General.
- 3.2.2 Elemental.
- 3.2.3 Intermedio.
- 3.2.4 Avanzado.

3.3 Análisis numérico.

- 3.3.1 Introductorio, incluyendo programación.
- 3.3.2 Elemental.
- 3.3.3 Intermedio.
- 3.3.4 Avanzado.
- 3.3.5 Cálculos para álgebra lineal.
- 3.3.6 Cálculos para ecuaciones diferenciales
- 3.3.7 Aproximación

3.4 Optimización. Programación matemática.

- 3.4.1 General.
- 3.4.2 Teoría de juegos.
- 3.4.3 Programación lineal.
- 3.4.4 Programación dinámica.
- 3.4.5 Redes y programación entera.
- 3.4.6 Programación no lineal.

3.5 Computación.

- 3.5.1 General (algoritmos).
- 3.5.2 Historia.
- 3.5.3 Computadoras y la sociedad.
- 3.5.4 Introductorio.
- 3.5.5 Lenguajes de programación.
- 3.5.6 Estructuras de datos.
- 3.5.7 Estructuras matemáticas.
- 3.5.8 Gráficas y combinatoria.
- 3.5.9 Aplicaciones a la estadística.
- 3.5.10 Aplicaciones a la matemática.
- 3.5.11 Programación de sistemas.
- 3.5.12 Arquitectura de computadoras.
- 3.5.13 Aritmética de computadora.
- 3.5.14 Estilo de programación.
- 3.5.15 Compilación.
- 3.5.16 Lenguajes formales y autómatas.
- 3.5.17 Inteligencia artificial.
- 3.5.18 Graficación.

3.6 Aplicaciones.

- 3.6.1 General.
- 3.6.2 Física.
- 3.6.3 Química.
- 3.6.4 Ingeniería y tecnología.
- 3.6.5 Ciencias sociales en general.
- 3.6.6 Economía.
- 3.6.7 Sociología, antropología y lingüística.
- 3.6.8 Psicología.
- 3.6.9 Política.
- 3.6.10 Biología en general.
- 3.6.11 Genética y evolución.
- 3.6.12 Población y ecología.
- 3.6.13 Información.
- 3.6.14 Matemáticas para la industria.

4 EDUCACION MATEMATICA

- 4.0 General.
- 4.1 Desarrollo de la educación matemática.
- 4.2 Psicología del aprendizaje de las matemáticas.
- 4.3 Investigación en la enseñanza de las matemáticas.
- 4.4 Enseñanza de las matemáticas.
 - 4.4.1 Primaria
 - 4.4.2 Secundaria, bachillerato

- 4.5 Pedagogía de las matemáticas, aspectos particulares.
- 4.6 Tecnología educativa. Materiales. Organización
- 4.7 Acreditación. Evaluación.
- 4.8 Formación de maestros.
- 4.9 Desarrollo curricular.

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1 GENERAL

- 1.0 Obras de consulta.
- 1.1 Exposición, lecturas.
- 1.2 Historia.
- 1.3 Biografía.
- 1.4 Papel de las matemáticas.
- 1.5 Naturaleza de las matemáticas.
- 1.6 Miscelánea, problemas, recreación.

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2 MATEMATICAS PURAS

- 2.1 Fundamentos.
- 2.2 Matemática combinatoria.
- 2.3 Teoría de números.
- 2.4 Algebra lineal.
- 2.5 Algebra.
- 2.6 Cálculo.
- 2.7 Análisis.
- 2.8 Geometría.
- 2.9 Topología.

2.1 Fundamentos.

- 2.1.1 General
- 2.1.2 Lógica
- 2.1.3 Teoría de conjuntos
- 2.1.4 Otros

2.1.1 General

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2.2 Matemática combinatoria.

2.2.1 Matemática finita

2.2.2 Combinatoria

2.2.3 Gráficas

2.2.4 Latices

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2.3.1 Historia

2.3.2 Lecturas

2.3.3 Introductorio

2.3.4 Intermedio

2.3.5 Temas especiales

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- 2.4.1 Elemental
- 2.4.2 Intermedio
- 2.4.3 Avanzado

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2.5 Algebra.

2.5.1 General

2.5.2 Grupos

2.5.3 Anillos e ideales

2.5.4 Campos

2.5.5 Categorías

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2.6 Cálculo.

2.6.0 Precálculo

2.6.1 Historia

2.6.2 Elemental

2.6.3 Intermedio

2.6.4 Avanzado

2.6.0 Precálculo

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2.7 Análisis.

2.7.1 General

2.7.2 Sistemas numéricos

2.7.3 Análisis real

2.7.4 Análisis complejo

2.7.5 Ecuaciones diferenciales ordinarias

2.7.6 Ecuaciones diferenciales parciales

2.7.7 Series

2.7.8 Análisis de Fourier

2.7.9 Análisis funcional

2.7.10 Cálculo de variaciones

2.7.11 Control óptimo

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2.8.0 Geometría analítica

2.8.1 Historia

2.8.2 Fundamentos

2.8.3 Figuras geométricas

2.8.4 Geometría no euclidea

2.8.5 Geometría proyectiva

2.8.6 Geometría vectorial

2.8.7 Geometría de transformaciones

2.8.8 Geometría vía álgebra lineal

2.8.9 Geometría algebraica

2.8.10 Geometría diferencial

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2.9.1 Enfoques intuitivos

2.9.2 Topología general

2.9.3 Topología algebraica

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2.9.5 Otros

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3 MATEMATICAS APLICADAS

- 3.1 Probabilidad.
- 3.2 Estadística.
- 3.3 Análisis numérico.
- 3.4 Optimización. Programación matemática.
- 3.5 Computación.
- 3.6 Aplicaciones.

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- 3.1.2 Fundamentos.
- 3.1.3 Elemental.
- 3.1.4 Intermedio.
- 3.1.5 Avanzado.

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- 3.2.2 Elemental.**
- 3.2.3 Intermedio.**
- 3.2.4 Avanzado.**

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3. 3 Análisis numérico

3. 3. 1 **Introdutorio incluyendo programación**

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3. 3. 4 **Avanzado**

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3. 3. 6 **Cálculos para ecuaciones diferenciales**

3. 3. 7 **Aproximación**

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- 3.4.3 Programación lineal.
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- 3.4.5 Redes y programación entera.
- 3.4.6 Programación no lineal.

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- 3.5.2 Historia.
- 3.5.3 Computadoras y la sociedad.
- 3.5.4 Introductorio.
- 3.5.5 Lenguajes de programación.
- 3.5.6 Estructuras de datos.
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- 3.5.8 Gráficas y combinatoria.
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- 3.5.10 Aplicaciones a la matemática.
- 3.5.11 Programación de sistemas.
- 3.5.12 Arquitectura de computadoras.
- 3.5.13 Aritmética de computadora.
- 3.5.14 Estilo de programación.
- 3.5.15 Compilación.
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- 3.6.8 Psicología.
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4 ENSEÑANZA DE LAS MATEMATICAS

4.0 General.

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- 4.2 Psicología del aprendizaje de las matemáticas.
- 4.3 Investigación en la enseñanza de las matemáticas.
- 4.4 Enseñanza de las matemáticas.
 - 4.4.1 Primaria.
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- 4.5 Pedagogía de las matemáticas, aspectos particulares.
- 4.6 Tecnología educativa. Materiales. Organización.
- 4.7 Acreditación. Evaluación.
- 4.8 Formación de maestros.
- 4.9 Desarrollo curricular.

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