



**BERITA ACARA PENGAJARAN  
SEMESTER GENAP 2022/2023  
PROGRAM STUDI TEKNIK INDUSTRI**

NAMA DOSEN : NATAYA CHAROONSRI RIZANI, ST, MT  
MATA KULIAH : MANAJEMEN KELAYAKAN  
SKS/SEMESTER : 3  
HARI/JAM : RABU/07.30-10.00  
KELAS/RUANG : A/ ONLINE

NO	TANGGAL	MATERI PENGAJARAN	Jumlah Mhs	TANDA TANGAN
1	28/3/23	PENGANTAR STUDI KELAYAKAN	3	
2	04/04/23	PENELITIAN PASAR	3	
3	11/04/23	ANALISA PERMINTAAN DAN PENAWARAN	3	
4	18/04/23	ANALISA PASAR	3	
5	10/05/23	ANALISA FINANSIAL-1	3	
6	17/05/23	ANALISA FINANSIAL-2	3	
7	24/05/23	AKUNTANSI FINANSIAL	3	
8		UTS		
9	03/06/23	ANALISIS FINANSIAL-ROR	3	
10	10/06/23	BEP	3	
11	17/06/23	STUDI KELAYAKAN	3	
12	24/06/23	STUDI KELAYAKAN JALAN TOL	3	
13	09/07/23	STUDI KELAYAKAN PROYEK SOSIAL	3	
14	15/07/23	STUDI KELAYAKAN BARANG LINGKUNGAN	3	
15	22/07/23	RESUME	3	
16		UAS		

Mengetahui  
Kepala Program Studi Teknik Industri

Ir. Sumiyanto, MT

Dosen Yang Bersangkutan

Nataya Charoonsri Rizani, ST., MT



YAYASAN PERGURUAN CIKINI  
INSTITUT SAINS DAN TEKNOLOGI NASIONAL

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**SURAT PENUGASAN TENAGA PENDIDIK**

Nomor : 03 / 03.1 – Gsi/ III/ 2023

SEMESTER GENAP TAHUN AKADEMIK 2022/2023

Nama	: Nataya Charoonsri Rizani.ST.MT	Status Pegawai	: Tetap
NIK	: 231420003	Program Studi	: Teknik Industri S1
Jabatan Akademik	: Lektor		

Bidang	Perincian Kegiatan	Tempat	Jam/ Minggu	Kredit (sks)	Keterangan
I PENDIDIKAN DAN PENGAJARAN	MENGAJAR DI KELAS (KULIAH/RESPONSI DAN LABORATORIUM)				
	1. Ergonomi & Perenc.Sist.Kerja 2	Industri S1	10:00-11:40,Selasa	2	Reguler
	2 Ergonomi & Perenc.Sist.Kerja 2	Industri S1	16:00_17:40, Jumat	2	K
	3.Manajemen Kelayakan (P)	Industri S1	07:30-10:00,Rabu	3	Reguler
	4.Perenc.dan.Pengembangan Produk	Industri S1	08:00_09:40,Selasa	2	Reguler
	5.Penelitian Oprasional-2	Industri S1	10,00-12,30, Senin	3	Reguler
	6.. Penelitian Oprasional-2	Industri S1	18.00-19:-40, Jumat	3	K
	7.Perenc.dan Pengembangan Produk	Industri S1	08:00-09:40, Selasa	2	Reguler
	8. Perenc.dan Pengembangan Produk	Industri S1	17:00-18:-40, Kamis	2	K
	9.Membimbing Tugas Akhir				1
10.Menguji Tugas Akhir				1	
II PENELITIAN	2. Penulisan Karya Ilmiah			1	
II PENGABDIAN DAN MASYARAKAT	2. Memberikan Penyuluhan / Penelitian / Ceramah kepada Masyarakat			1	
IV UNSUR-UNSUR PENUNJANG	2. Berperan serta aktif dalam pertemuan ilmiah/ seminar			1	
	Jumlah Total			24	

Kepada yang bersangkutan akan diberikan gaji/honorarium sesuai dengan peraturan penggajian yang berlaku di Institut Sains dan Teknologi Nasional Penugasan ini berlaku tanggal 01 Maret 2023 sampai dengan 31 Agustus 2023.

**Tembusan :**

- 1.Direktur Akademik - ISTN
- 2.Direktur Non Akademik - ISTN
- 3.Ka. Biro SumberDayaManusia - ISTN
- 4.Kepala Program StudiFak. ....
- 5.Arsip



# DAFTAR NILAI

## SEMESTER GENAP REGULER TAHUN 2022/2023

Program Studi : Teknik Industri S1  
Matakuliah : Manajemen Kelayakan (P)  
Kelas / Peserta : A  
Perkuliahan : Kampus ISTN Bumi Srengseng Indah  
Dosen : Nataya Charoonsri Rizani, ST. MT.

Hal. 1/1

No	NIM	N A M A	ABSEN	TUGAS	UTS	UAS	MODEL	PRESENTASI	NA	HURUF
			10%	20%	30%	40%	0%	0%		
1	18230003	Ahmad Vauzi	100	70	85	70	0	0	77.5	A-
2	18230011	Kinanti Alifah Wildana	100	0	0	0	0	0	0	
3	20230002	Andrea Seviandi	100	75	87	80	0	0	83.1	A

Rekapitulasi Nilai							
A	1	B+	0	C+	0	D+	0
A-	1	B	0	C	0	D	0
		B-	0	C-	0	E	0

Jakarta, 31 July 2023


Dosen Pengajar

**Nataya Charoonsri Rizani, ST. MT.**

# *Analisis Biaya & Manfaat*







<b>Karakteristik</b>	<b>Public Sector</b>	<b>Private sector</b>
<b>Size oof investment</b>	<b>larger</b>	<b>Some large, more medium to small</b>
<b>Life estimates</b>	<b>Longer (30-50+ years)</b>	<b>Shorter (2-25 years)</b>
<b>funding</b>	<b>Taxes, fees,bonds, private bonds</b>	<b>Stocks, bonds, loans,individual owner</b>
<b>Interest rate</b>	<b>lower</b>	<b>Higher, based on market cost of capital</b>
<b>Alternative selection criteria</b>	<b>Multiple criteria</b>	<b>Primarily based on rate of return</b>
<b>Environment evaluation</b>	<b>Political inclined</b>	<b>Primarily economic</b>
<b>Annual cash flow estimates</b>	<b>No profit; cost, benefits, and disbenefits are estimated</b>	<b>Revenues contibute to profit; cost are estimated</b>

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## *Public Sector*

- Tidak selalu proyek pemerintah berorientasi pada keuntungan.
- **Contoh : Fasilitas publik taman kota, rumah sakit, penghijauan, pembangunan jalan tol, dsb.**

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# *Identifikasi Benefit, Disbenefit dan Ongkos*

- **Benefit atau Manfaat** adalah semua manfaat positif yang akan dirasakan oleh masyarakat umum dengan terlaksananya suatu proyek
- **Disbenefit** adalah manfaat atau dampak negatif yang menjadi konsekuensi bagi masyarakat umum dengan adanya proyek tsb.
- **Biaya :**
  - **Biaya –biaya awal proyek**
  - **Biaya-biaya tahunan**



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# *Analisis Biaya dan Manfaat*

$$B/C = \frac{PW_{\text{manfaat}}}{PW_{\text{biaya}}} = \frac{AW_{\text{manfaat}}}{AW_{\text{biaya}}} = \frac{FW_{\text{manfaat}}}{FW_{\text{biaya}}}$$

Jika  $B/C \geq 1.0$ , terima proyek yang perkiraan secara ekonomis diterima

Jika  $B/C < 1.0$ , proyek secara ekonomis tidak diterima



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# *Analisis Biaya dan Manfaat*

$$B/C = \frac{\text{Benefits} - \text{Disbenefits}}{\text{Costs}} = \frac{B - D}{C}$$

$$\text{Modified } B/C = \frac{\text{Benefits} - \text{Disbenefits} - M \ \& \ O \ \text{Costs}}{\text{Initial Investment}}$$

- Modified B/C akan menghasilkan nilai yang berbeda dengan metode B/C konvensional.
- Perubahan tersebut hanya pada rasio, tetapi tidak pada keputusan untuk menerima atau menolak proyek.

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# *Analisis Manfaat Biaya untuk membandingkan Alternatif*

- 1. Tentukan total equivalent cost untuk kedua alternatif**
- 2. Urutkan alternatif berdasarkan total equivalent cost : yang terkecil lebih dulu. Hitung incremental cost ( $\Delta C$ ) untuk alternatif dengan biaya lebih besar. Ini menjadi pembagi dalam B/C.**
- 3. Hitung total equivalent benefits dan disbenefits yang diperkirakan untuk kedua alternatif. Hitung incremental benefit ( $\Delta B$ ) untuk alternatif dengan dengan biaya lebih besar (atau  $\Delta(B-D)$  jika disbenefit dipertimbangkan).**
- 4. Hitung incremental B/C ratio dgn  $(B-D)/C$ .**
- 5. Gunakan petunjuk pemilihan untuk memilih alternatif dengan biaya biaya lebih besar, jika  $B/C \geq 1.0$**



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# *Contoh Soal 1*

**The Ford foundation expects to award \$15 million in grants to public high schools to develop new ways to teach the fundamentals of engineering that prepare students for university level material. The grants will extent over a 10 year period and will create an estimated savings of \$1.5 million per year in faculty salaries and student-related expenses. The Foundation uses a rate of return of 6% per year on all grant awards.**

**This grants program will share Foundation funding with ongoing activities, so an estimated \$200,000 per year will be removed from other program funding. To make this program successful, a \$500,000 per year operating cost will be incurred from the regular M&O budget. Use B/C method to determine if the grants program is economically justified**



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## *Contoh Soal 2*

The city of Garden Ridge, Florida, has received designs for a new patient room wing to the municipal hospital from two architectural consultants. One of the two designs must be accepted in order to announce it for construction bids. The costs and benefits are the same in most categories, but the city financial manager decided that the three estimates below should be considered to determine which design to recommend at the city council meeting next week to present to the citizenry in preparation for an upcoming bond referendum next month

	Design A	Design B
Construction Cost \$	10,000,000	15,000,000
Building M. Cost/yr	35,000	55,000
Patient Usage cost/yr	450,000	200,000

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## *Contoh Soal 2 (cont'd)*

The patient usage cost is an estimate of the amount paid by patients over the insurance coverage generally allowed for a hospital room. The discount rate is 5%, and the life of the building is estimated at 30 years.

1. Use conventional B/C ratio analysis to select design A or B
2. Once the two designs were publicized, the privately owned hospital in the directly adjacent city of Forest Glen lodged a complaint that design A will reduce its own municipal hospital's income by an estimated \$500,000 per year, because some of the day surgery features of design A duplicate its services. Subsequently, the Garden Ridge merchant's association argued that design B could reduce its annual revenue by an estimated \$400,000 because it will eliminate an entire parking lot used by their patrons for short term parking. The city financial manager stated that these concerns would be entered into the evaluation as disbenefits of the respective designs. Redo the B/C analysis to determine if the economic decision is still the same as when disbenefits were not considered.



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# *Prosedur untuk melakukan Incremental Analysis dari Multiple Alternatives*

1. Tentukan total equivalent cost untuk semua alternatif.
2. Urutkan alternatif berdasarkan total equivalent cost, dari yang terkecil
3. Tentukan total equivalent benefits (dan disbenefits) untuk setiap alternatif
4. Hitung B/C untuk alternatif urutan pertama. Jika  $B/C < 1.0$ , eliminasi yang berada di urutan berikutnya. Dan lakukan pada challenger berikutnya. Ulangi sampai  $B/C \geq 1.0$ , maka defender dieliminasi.
5. Hitung incremental cost dan benefit :
  - $\Delta B = \text{challenger benefit} - \text{defender benefit}$
  - $(\Delta B = \text{defender usage cost} - \text{challenger usage cost})$
  - $\Delta C = \text{challenger cost} - \text{defender cost}$
6. Hitung incremental B/C untuk challenger yang pertama dibandingkan defender. Jika incremental  $B/C \geq 1.0$ , challenger menjadi defender dan defender dieliminasi.
7. Ulangi langkah ke 5 dan ke 6 sampai tinggal satu alternatif yang tersisa. Itulah yang terpilih.



# Contoh Soal

Departemen Pariwisata sedang mengembangkan 4 alternatif proyek rekreasi di Jawa Barat, sebut saja A, B, C dan D. Besarnya manfaat ekuivalen tahunan, ongkos tahunan dan nilai rasio B/C dari keempat alternatif dapat dilihat di tabel berikut.

Alternatif	Manfaat Ekuivalensi Tahunan	Ongkos Ekuivalensi Tahunan	Resiko B/C
A	182 juta	91.5 juta	1.99
B	167 juta	79.5 juta	2.1
C	115 juta	88.5 juta	1.3
D	95 juta	50 juta	1.9

Buatlah analisis B/C meningkat (*Incremental Analysis*), untuk menentukan yang terbaik di antara keempat alternatif tersebut.

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# *Ilustrasi Incremental Analysis*

Alternatif	$\Delta$ Manfaat Tahunan	$\Delta$ Ongkos Tahunan	Rasio $\Delta B/ \Delta C$	Keputusan
<b>D - 0</b>	<b>95 jt</b>	<b>50 jt</b>	<b>1.9</b>	<b>Terima D</b>
<b>C - D</b>	<b>20 jt</b>	<b>38.5 jt</b>	<b>0.52</b>	<b>Tolak C</b>
<b>B - D</b>	<b>72 jt</b>	<b>29.5 jt</b>	<b>2.44</b>	<b>Terima B</b>
<b>A - B</b>	<b>15 jt</b>	<b>12 jt</b>	<b>1.25</b>	<b>Terima A</b>