

## ANNUAL PROGRAM REPORT

I.

# SELF-STUDY

Five-Year Review Planning Goals 5-Year Plan:

- 1. Summary of program changes: The Firs year of implemen a ion of semes er !ase" curriculum was successful. #\$ ensive a"vising main change is he ransfer o a semes er-!ase" program. The aim of a"vising was no o "elay any s u"en %s gra"ua ion.
- &. Facul y: 'e hire" a enure-rac(facul y o su!s i u e for ) owar" \*ei who lef he year !efore. +r., le\$ Sumarono s ar e" his Fall &-1.. ) e comes o us wi h years of e\$perience wi h /0T#\* an" 1/S12 corpora ions.
- 3. Research: The 1 ompu er #ngineering facul y are ac ive in research an" have !een successful in pu!lishing heir wor(. Grow h in research is a goal ha he engineering facul y are aggressively pursuing.
- 4. \*a!ora ory +evelopmen : #ngineering is !eing alloca e" space for facul y research an" eaching in ScS &15. The space is !eing u ili5e" for he "evelopmen of an elec ronics la!ora ory an" o her compu er engineering research space re6uiremen . Two compu er engineering facul y an" facul y from compu er science wor( in his la!ora ory.
- 5. #6uipmen : Through , &#& annual fun"ing an" /T "epar men resources we are planning o upgra"e he compu er engineering la!ora ory Sc 0 &37.
- 8. Grow h: The 1 ompu er #naineering program is he fas es growing un"ergra" ua e program

s u"en s. Three enure- rac( facul y< Roger + oering< > ames Tan"on< an", le\$ Sumarsono suppor his program.

!&rr %& & : ' e have ransforme" he curriculum in ransi ion o semes er offerings. The ransforme" curriculum sa isfies accre"i a ion re6uiremen s an" is in line wi h he nee"s of i s cons i uen s.

\$ \$ # The num!er of s u"en s has increase" from 1. in &-1& o 15. in he fall of &-1;.
F %& \$'# Three enure- rac( facul y serve he 1 ompu er #ngineering program.

S\$ ((# ' e have wo full ime s aff for he School of #ngineering< = rs. \*isa ) olms rom<br/>#ngineering , "visor an" a la!ora ory echnician< = r. \*inh 0 guyen. ' e also have a par ime<br/>, S1 who is wi h engineering for ; hours a wee(.

R &r% # The ScS 1&5 research la!ora ory is func ional an" e6uippe" wi h "rones an" o her research e6uipmen . +r. >ames Tan"on an", le\$ Sumarsono con"uc research in ha la!.

A \$# 1 ompu er engineering is an accre"i e" program. , s par of he accre"i a ion process< a sys ema ic assessmen an" evalua ion plan has !een in place for four years. The "e ails of assessmen ac ivi ies are given !elow.

# II. <u>SUMMARY OF ASSESSMENT</u>

,.Pr r L r O&\$% )PLO\*

- 1. , n a!ili y o i"en ify< formula e< an" solve comple\$ engineering pro!lems !y applying principles of engineering< science< an" ma hema ics. ?/\* 2 1@
- &. , n a!ili y o apply engineering "esign o pro"uce solu ions ha mee specifie" nee"s wi h consi"era ion of pu!lic heal h< safe y< an" welfare< as well as glo!al< cul ural< social< environmen al



B. Pr r L r O&\$% )S\* A

List the PLO(s) assessed. Provide a brief backgro !d o! "o r #rogra \$%s histor" of assessi !g the PLO(s) (e.g.& a !! a''' first ti \$e& #art of other assess \$e !ts& etc.)

The program learning ou comes assesse" for &-1; &-1. are P\*2s 3 an" 5. The P\*2s were assesse" !y using resul s from group pro9ec s or presen a ions across hree classes. Since he : S in 1 ompu er #ngineering is a new program ha officially !egan in &-13 his year is par of he secon" 5-year cycle of assessmen . The hree classes were  $1S \ 3\&1 \ ?1 \ ompu \ er$ , rchi ec ure 1&  $1 = P# \ 4.\&$  ?Senior +esign& an"  $1 = P# \ 4.\&$ ?Senior 1 aps one $\emptyset$ . ' hile our 5-year assessmen plan has eleven program learning ou comes we elec e" o change hem with he conversion o he semes er sys em. The ol" learning ou comes with he new learning ou comes ?in re" $\emptyset$  ha hey map o are lis e" here:

#\$plana ion of P\*2s:

P\*2 1: , !ili y o apply (nowle"ge of ma hema ics science an" engineering. P\*21

P\*2 &: , !ili y o "esign an" con"uc e\$perimen s as well as o analy5e an" in erpre "a a. P\*28

P\*2 3: , !ili y o "esign a sys em< componen < or process o mee "esire" nee"s wi hin realis ic cons rain s such as economic< environmen al< social< poli ical< e hical< heal h an" safe y< manufac ura!ili y< an" sus aina!ili y. P\*2&

P\*2 4: , !ili y o func ion on mul i"isciplinary eams. P\*25

P\*2 5: , !ili y o i"en ify formula e an" solve engineering pro!lems. P\*21

P\*2 8: Bn"ers an"ing of professional an" e hical responsi!ili y. P\*24

P\*2 7: , !ili y o communica e effec ively. P\*23

P\*2;::roa" e"uca ion necessary o un"ers an" he impac of engineering solu ions in a glo!al economic environmen al an" socie al con e\$ . P\*24

P\*2 .: Recogni ion of he nee" for an a lili y o engage in life-long learning. P\*27

P\*2 1-: Cnowle"ge of con emporary issues. P\*2&

P\*2 11: , !ili y o use he echni6ues< s(ills< an" mo"ern engineering ools necessary for engineering prac ice. P\*28

1.S& r' (A \$Pr %

( \$\$ari)e "o r assess \$e!t #rocess brief" si!g the fo"o \*i!g s b-headi!gs.

I \$r& \$) \*# (+!c' de if !e \* or o'd i !str \$e !th ho \* deve 'o #edh descri #tio ! of co !te !t)

The ins rumen s use" o assess P\*2%s were pu!lic presen a ions an" group pro9ec s. Since professors use" "ifferen gra"ing scales< each 6ues ion normali5e" o a ra ing scale 1-4 wi h 1 !eing he lowes score an" 4 !eing he highes score. Dues ions focuse" on engineering "a a analysis an" sys em "esign an" syn hesis.

#### S + Pr % &r #

S u"en s in "ifferen classes were assesse" !ase" on specific course ma erials in he compu er engineering "iscipline. The (nowle"ge o !e successful in hese courses is cumula ive where 1S 3&1 ma erial is prac ice level< while 1 = P# 4.8 an" 1 = P# 4.3 are mas ery level. Pro!lems were chosen !y he proc oring professor o !e e\$emplary of he ma erial in each course.

#### S + !" r %\$ r \$ % #

The courses use" for assessmen are all re6uire" courses in he compu er engineering "iscipline. 1orrec comple ion of each 6ues ion re6uires essen ial (nowle"ge for comple ion o he "egree program. The selec ion was "one in consul a ion !e ween he in"ivi"ual proc oring professors< he assessmen coor"ina or< an" he "epar men chair for compu er engineering.

#### D \$ ! %\$ # (i !c' de \*he !& \*ho& a !d ho \* co''ected)

Pro!lems were collec e" !y he responsi!le "a a assessmen coor"ina or. Raw "a a scores were normali5e" across all sample pro!lems o he 1-4 scale for correc ness. 0e\$ < he scores were u ili5e" o facili a e comparisons !e ween /n ro"uc ory< Prac ice< an" = as ery levels.

#### D\$A'#

```
1S 3&1 ? augh !y 1 = P# facul y@
/ em: /mplemen an ari hme ic logic uni wi h your par ner.
, verage score ?ou of 40: &..7 ?31 su!missions0
Score of 1: &
                  Score of &: . Score of 3: ; Score of 4: 1&
Score of 3 or higher: 84.5 E
1 = P # 4.8
/ em: Pro9ec presen a ion F gra"e" !y con en < organi5a ion< an" "elivery.
, verage score ?ou of 40: 3.8 ?15 su! missions0
Score of 1:1
                  Score of &: - Score of 3: 3 Score of 4: 11
Score of 3 or higher: .3.3E
1 = P # 4.3
/ em: Final group prosec F gra"e" on in egra ion of mem!er "esigne" componen s.
, verage score ?ou of 40: 3.3 ?14 su! missions0
Score of 1: -
                  Score of &: 1 Score of 3: ; Score of 4: 5
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Score of 3 or higher: .&..E
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Ru!ric for P\*23?4.&@:

?1@ Presen a ion gives vague specifica ion of proßec < leng h oo shor < im!alance" "elivery</li>
?&@ Presen a ion con en missing a maßor componen < leng h is shor < organi5a ion issues</li>
?3@ Presen a ion organi5a ion has minor "iscon inui ies< con en misses only minor poin s< nee" o prac ice "elivery</li>

?4@ Presen a ion organi5a ion is coheren < con en is comple ely specifie"< goo" "elivery

## Ru!ric for P\*25?3&1 an" 4.3@:

?1@ 1orrec ly specifie" less han &5E of all componen s an" connec ions in circui "esigns
?&@ 1orrec ly specifie" &5E or more of all componen s an" connec ions in circui "esigns
?3@ 1orrec ly specifie" 5-E or more of all componen s an" connec ions in circui "esigns
?4@ 1orrec ly specifie" 75E or more of all componen s an" connec ions in circui "esigns

## +.S& r'(A \$R &\$

(\$\$ari)e "o rassess \$e !t res "ts brief " si !g the fo 'o \*i !g s b-headi !gs.

#### M F #

' i h respec o P\*25: S u"en s in 1S 3&1 an" 1 = P#4.3 wor(e" oge her o complete a group prosec. ' hile s u"en s in 1S 3&1 were lef o hemselves with respec o !rea(ing "own group responsi!ili ies< s u"en s in 1 = P#4.3 were gui"e" o speciali5e an" gra"e" !ase" on he 6uali y of heir in "ivi"ual components., s s u"en s move" from practice level o mastery level< he level of un"ers an "ing increase" significantly with an average prosect score of &...7 o 3.3. The !i-mo"el "is ri!u ion of un"ers an "ing increase" significantly with a significantly with

N ,\$ S\$ +) \* ( r ! \$" L +# (.eco \$ \$e!datio!s to address fi!di!gs& ho \* / \*he!)

Professors in compu er engineering shoul" convene o prepare he assessmen 6ues ions for each class., ""i ionally< crea ing 6ues ions ha es in ro"uc ory< prac ice< an" mas ery levels< shoul" !e consi"ere".) owever< he assessmen 6ues ions shoul" !e !alance" in ha hey can !e solve" a he en" of a final e\$am.

O\$" r R ( %\$ #

The sylla!i an" assessmen 6ues ions use" for 1, PR assessmen an", :#T assessmen shoul" !e co-crea e" o minimi5e he impac of program assessmen o he s u"en learning e\$perience.

## #.A \$P (rN,\$Y r

(\$\$ari)e "o r assess \$e!t #'a!s for the !e0t "ear& i!c' di!g the PLO(s) "o #'a! to assess& a!" revisio!s to the #rogra\$ assess \$e!t #'a! #rese!ted i! "o r 'ast five-"ear #'a! se'f-st d"& a!d a!" other re'eva!t i!for \$atio!.

'e plan o con inue assessmen wih mi" erm e\$am 6ues ions an" final e\$am 6ues ions where feasi!le for in"ivi"ual wor( for P\*2S 1<&<4<8< an" 7. P\*2s 3 an" 5 re6uire assessmen of group wor( an" an a!ili y o communica e respec ively. For P\*2 3< group pro9ec gra"es an" peer review 6ues ionnaires will !e use" for assessmen . For P\*2 5< wri en an" oral assignmen s will !e use" for assessmen . The ne\$ se of P\*2s o assess ?on he new se @ are P\*2 1< P\*2 4< an" P\*2 7. , II P\*2s will !e assesse" !y ei her mi" erm or final e\$am 6ues ions.

# ///. DIS!USSION OF PROGRAM DATA - RESOUR!E RE.UESTS

D %& (Tr - R ( %\$

The following a!le is enrollmen "a a e\$ rac e" from Pioneer +a a ' arehouse. This "a a in"ica es ha he 1 ompu er #ngineering enrollmen is increasing a a cons an ra e. The curren "a a as of Fall of &-1; s an"s a 15.. The curren facul y of 1 ompu er #ngineering areJ Roger +oering >ames Tan"on an", le\$ Sumarsono. The program is accre"i e" !y , :#T un il he Fall of &-&&.

Tr	!	S%"		! +&\$ r E r	I&\$r E r	Er M\$	Т\$	M r
F.&r\$r /01/	Т\$	E	r	/2	<u>13</u>	<u>45</u>	<u>63</u>	0
F.&r\$r /014	Т\$	E	r	52	<u>72</u>	<u>28</u>	<u>156</u>	0
F.&r\$r /012	Т\$	E	r	104	<u>63</u>	<u>83</u>	<u>/68</u>	0
F.&r\$r /017	Т\$	E	r	140	<u>108</u>	<u>104</u>	/1/	0

