Algorithmic Period Based Budgeting

A Beginner’s Guide

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Nassau Community College
Session Agenda

• Benefits of Algorithmic Budgeting
• Setup (A Step By Step Guide)
• The Process
• Things to Know
• Questions
Nassau Community College- NCC

- Nassau Community College, part of the SUNY system, serves students of all ages and backgrounds. NCC offers day, evening, weekend, continuing and certificate programs
- 225-acre campus in the center of Long Island
- 23,000 students
- Approx. 7,000 Pell recipients
- High loan volume population
What Can Algorithmic Budgeting do for you?

- Recalculation of tuition component based on enrollment
  - In or Out of State Tuition amounts
- Recalculation of fee component based on enrollment
- Recalculation of cost of books/supplies component based on enrollment
- Recalculation of room/board component based on housing status
- Dependent or Independent student budgets
- Add “Special” charges into budgets via rules
- Include loan fees only if the student accepts a loan
- Recalculate and lock/freeze budgets (by Period)
How does NCC use Algorithmic Budgeting

**TUITION**

- In county residents are charged a flat rate – TUIT (detail code)
- Out-of-County are charged TUIT and TUNC (detail codes)
- Out-of-State are charged TUIT and TUNS (detail codes)

- Algorithmic budgeting rules calculate the student’s tuition amount based on the TUI category code in TSADETC
How does NCC use Algorithmic Budgeting

**Books/Supplies**

- Books are calculated based on a local table view “ROVZLII” “REPEAT” enrollment rule
  - Example: REPEAT = 6.00 credits
  - Value for student’s books will be (6 credits * Per credit book amount)

**Note:** Per credit book amount is determined by institution
How does NCC use Algorithmic Budgeting

Loan Fees

- Algorithmic budgeting can add loan fees to a student’s budget for only those who have accepted a loan
How does NCC use Algorithmic Budgeting

**Hard-Coded Items and ROPROLL(able) Items**

- Items we decided that do not change based on enrollment
  - Transportation
  - Personal
  - Room/Board charges

**Rules and figures that are hard-coded are ROPROLL(able)!!**
Step 1

RTVPBTP- Set up a Budget Type(s)
Step 2

RTVPBG - Set up your Budget Groups

Try to keep it simple, let the rules work for you
Step 3

RTVPBCP - Set up your Budget Components. Check off “Create as Category” to populate RTVBCAT. This is seen by student in SSB

<table>
<thead>
<tr>
<th>Component Code</th>
<th>Component Description</th>
<th>Active</th>
<th>Create as Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTE</td>
<td>Tuition</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2FEE</td>
<td>Fees</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3BKS</td>
<td>Books/Supplies</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4TRN</td>
<td>Transportation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>5PER</td>
<td>Personal</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>6RB</td>
<td>Room/Board</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>7CH</td>
<td>Child Care</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>8CMP</td>
<td>Computer</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>9OTH</td>
<td>Other</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>LNE</td>
<td>Loan Fees</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Step 4

RTVABRC - Define rule codes

You will later create the rules for these. The ones with arrows below we created rules

<table>
<thead>
<tr>
<th>Rule Code</th>
<th>Rule Description</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOKS</td>
<td>Calculate Books</td>
<td>✔</td>
</tr>
<tr>
<td>CHILD</td>
<td>Calculate Child Care</td>
<td>✔</td>
</tr>
<tr>
<td>FEES</td>
<td>Calculate Fees</td>
<td>✔</td>
</tr>
<tr>
<td>LOANFEE</td>
<td>Calculate Loan Fees</td>
<td>✔</td>
</tr>
<tr>
<td>PERSONAL</td>
<td>Calculate Personal Expense</td>
<td>✔</td>
</tr>
<tr>
<td>ROOM</td>
<td>Calculate Room</td>
<td>✔</td>
</tr>
<tr>
<td>TRANS</td>
<td>Calculate Transportation</td>
<td>✔</td>
</tr>
<tr>
<td>TUITION</td>
<td>Calculate Tuition</td>
<td>✔</td>
</tr>
</tbody>
</table>
Step 5 - Assign Budget Group Codes

**RORRULE - G - Period Budget Group Assignment**

**FAFSA is dependent** - Group Code assigned is “DEP”

- **Rule Type:** G = Period Budget Group Assignment
- **Aid Year:** 1516 (Award Year 2015/2016)
- **Group Code:** DEP - Dependent With Family
- **Fund Code:** 

**FAFSA is independent and Housing code is 1 (with parents) or Null**

- **Rule Type:** G = Period Budget Group Assignment
- **Aid Year:** 1516 (Award Year 2015/2016)
- **Group Code:** IND - Independent With Family
- **Rule Active**

**FAFSA is independent and Housing code is 2, 3, or 4**

- **Rule Type:** G = Period Budget Group Assignment
- **Aid Year:** 1516 (Award Year 2015/2016)
- **Group Code:** INDO - Independent Not With Parents
- **Fund Code:** 

- **Rule Active**
Step 6

RBRPBYR

Populate
- Budget Groups
  - Long description - Seen on SSB
- Budget Types
- Budget Categories
- Budget Components
Step 6 Continued

RBRPBYR continued...
Step 6 Continued

RBRPBYR continued...
Step 6 Continued

This is where you associate Algorithmic rules that you write later. You will need to come back to this form.
Step 6 Continued

RBRPBYR continued...

<table>
<thead>
<tr>
<th>Component Code</th>
<th>Category Code</th>
<th>Long Description</th>
<th>Comment</th>
<th>Amount</th>
<th>Algorithmic Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATRN</td>
<td>ATRN</td>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hard coded cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPER</td>
<td>SPER</td>
<td>Personal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hard coded cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRB</td>
<td>SRB</td>
<td>Room/Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hard coded cost</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 6 Continued

RBRPBYR continued...
**Step 7- Populate RBRPBGR**

**RBRPBGR** - populates Pell Budget on ROAPELL

It is recommended that you do not use an algorithmic rule on this form since this is used to populate the ROAPELL Pell budget. Define your components by full year amounts on this form for all of your group codes.

---

<table>
<thead>
<tr>
<th>Aid Year</th>
<th>Group Code</th>
<th>Description</th>
<th>EFC</th>
<th>Pell</th>
</tr>
</thead>
<tbody>
<tr>
<td>1516</td>
<td>DEP</td>
<td>Federal Methodology</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pell</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

![Image of form with budget components]
Step 8 - RORALGS Define Key Blocks for Specific Amounts

Your rules can reference this form to pull specific amounts.
Step 9 – RBRABRC Write your rules

RBRABRC- Rules....Validate and Test Rules!!!

Create your rules based on hierarchy sequences. For example, sequence 1 should be most of your population and then if sequence 1 rules does not apply to the student, it will move on to sequence 2, and so on. If none apply, then the particular component will not be added.
Step 9 – Rules

Refer to Docx

**Tuition**

**Sequence 1**

Select roralgs_amt
From rovst14, SOBPTRM, roralgs
where roralgs_key_1 = 'TUIT_NE'
and roralgs_key_2 = 'IN_STATE'
and roralgs_aidy_code = :aidy
and rovst14_resd_code in ('R','M')
and rovst14_pidm =:PIDM
and SYSDATE < SOBPTRM_CENSUS_DATE
and sobptrm_ptrm_code = '1'
and sobptrm_term_code = :period

**Fulltime In state before soaterm census date (part of term 1)**

**Sequence 2**

Select roralgs_amt
From rovst14, SOBPTRM, roralgs
where roralgs_key_1 = 'TUIT_NE_O'
and roralgs_key_2 = 'NON_DISTRICT'
and roralgs_aidy_code = :aidy
and rovst14_resd_code not in ('R','M')
and rovst14_pidm =:PIDM
and SYSDATE < SOBPTRM_CENSUS_DATE
and sobptrm_ptrm_code = '1'
and sobptrm_term_code = :period

**Fulltime Out of state before soaterm census date (part of term 1)**

**Sequence 3**

Select roralgs_amt
From rovst14, roralgs
where roralgs_key_1 = 'TUIT_NE'
and roralgs_key_2 = 'IN_STATE'
and roralgs_aidy_code = :aidy
and rovst14_resd_code in ('R','M')
and rovst14_pidm =:PIDM
and not exists (select 'x' from sobterm
where sobterm_term_code = :period)

**Fulltime In state where Soaterm does not exist**
Step 10 – Populate **RBRPBDR**

**RBRPBDR**- Non-Pell Budget Type Code

Populate “hard-coded” figures and “algorithmic rules” codes for **all** your group codes by Term/Period amounts
Batch Process- RBRPBG and RBRPBC

- Running the RBRPBG process to assign your budget groups and components. This can also be run in simulation mode.
- Running RBRPBC to recalculate your budgets. You can do this at any point in time.
Applicant Period Budget RBAPBUD 3.19 (PROD)

Aid Year: 1516  
ID: NOC.  

Aid Period: Fall/Spring
Percent of Full Year: 100.000
Information Access Indicator

FM Budget Duration: 9
IM Budget Duration:

Type Code: CAMP  
Federal Methodology
EFC Method: F

Group Code: DEP  
Dependent With Family
DEP  
Dependent With Family

Period: 201510  
Fall 2015 (2015-2016)
201640  
Spring 2016 (2015-2016)

Component | Amount
--- | ---
TU | 4,534.00
FE | 319.00
BK | 1,622.50
TR | 1,460.00
PE | 1,320.00
RB | 4,700.00
Total: 13,955.50
<table>
<thead>
<tr>
<th>Component Code</th>
<th>Description</th>
<th>Amount</th>
<th>Rule</th>
<th>Sequence</th>
<th>Activity Date</th>
<th>User ID</th>
<th>System Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1TUI</td>
<td>Tuition</td>
<td>2,267.00</td>
<td>TUITION</td>
<td>5</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td>2FEE</td>
<td>Fees</td>
<td>159.00</td>
<td>FEES</td>
<td>3</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td>3EKS</td>
<td>Books/Supplies</td>
<td>797.50</td>
<td>BOOKS</td>
<td>3</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td>4TRN</td>
<td>Transportation</td>
<td>730.00</td>
<td></td>
<td>3</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td>5PER</td>
<td>Personal</td>
<td>660.00</td>
<td></td>
<td>3</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td>5RB</td>
<td>Room/Board</td>
<td>2,350.00</td>
<td></td>
<td>3</td>
<td>22-SEP-2015</td>
<td>BANWORX</td>
<td>S</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>6,963.50</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Applicant Budget by Period

**Aid Year:** 1516  
**ID:** NOG  
**EFC Method:** F Federal

#### Component Totals

<table>
<thead>
<tr>
<th>Component</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTUP</td>
<td>4,534.00</td>
</tr>
<tr>
<td>2FEE</td>
<td>319.00</td>
</tr>
<tr>
<td>3BKS</td>
<td>1,622.50</td>
</tr>
<tr>
<td>4TRN</td>
<td>1,460.00</td>
</tr>
<tr>
<td>5PER</td>
<td>1,320.00</td>
</tr>
<tr>
<td>6RB</td>
<td>4,700.00</td>
</tr>
</tbody>
</table>

**Total of All Components:** 13,955.50

#### Period 1-4

- **Fall 2015 (2015-20):**
  - Amount: 2,267.00
  - DEP: 159.00

- **Spring 2016 (2015-20):**
  - Amount: 2,267.00
  - DEP: 159.00

#### Period 5-8

- **Fall 2015 (2015-20):**
  - Amount: 2,267.00

- **Spring 2016 (2015-20):**
  - Amount: 2,267.00

- **Fall 2016 (2016-17):**
  - Amount: 2,350.00

- **Spring 2016 (2016-17):**
  - Amount: 2,350.00
How it all works together

Students are assigned a Flat budget based on
- Dependent
- Independent
- Independent not at home (campus housing/off campus/with relative- based on FAFSA)

The reason for a flat budget at first:
- Students register after the FAFSA is filed
- Bursar office has not assessed fees
- Tuition has not been determined by college

Recalculation of the budget
- Can be done at anytime
- We recalculate after we freeze enrollment and then run our over award report
Shopping Sheet Example

The direct costs and indirect costs are tied to RBRPBYR

This is tied to your RPRSHOP setup (Period Budget Setup)
# Shopping Sheet

## Nassau Community College

Cristina

### ESTIMATED COST OF ATTENDANCE IN THE 2015-16 ACADEMIC YEAR

(Subject to legislative changes)

<table>
<thead>
<tr>
<th>Costs</th>
<th>Direct Costs</th>
<th>Indirect Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and fees</td>
<td>4,854.00</td>
<td>4,700.00</td>
</tr>
<tr>
<td>Housing and meals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated books and supplies</td>
<td>1,650.00</td>
<td></td>
</tr>
<tr>
<td>Estimated transportation</td>
<td>1,460.00</td>
<td></td>
</tr>
<tr>
<td>Estimated other educational costs</td>
<td>1,320.00</td>
<td></td>
</tr>
</tbody>
</table>

*Costs will vary based on enrollment status*

Estimated Cost of Attendance $13,984.00

---

### COLLEGE OVERVIEW

**GRADUATION RATE**

Percentage of full-time students who graduated within 150% of the expected time for completion
## Comparisons

<table>
<thead>
<tr>
<th>Old Form</th>
<th>New Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTVBPTYP</td>
<td>RTVPBTP</td>
</tr>
<tr>
<td>RTVBGRP</td>
<td>RTVPBGP</td>
</tr>
<tr>
<td>RTVCOMP</td>
<td>RTVPBCP</td>
</tr>
<tr>
<td>RBAABUD</td>
<td>RBAPBUD</td>
</tr>
</tbody>
</table>

RTVPBTP - Budget Types
RTVPBGP - Budget Groups
RTVPBCP - Budget Components
RBAPBUD - Student Budget Form
## Comparison

**What it used to look like**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Group Active</th>
<th>Group Priority</th>
<th>Rules Exist</th>
<th>Rules Active</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF</td>
<td>Dependent Fulltime</td>
<td>✅</td>
<td>7</td>
<td>✅</td>
<td>✅</td>
<td>10520</td>
</tr>
<tr>
<td>INHOF</td>
<td>Independent AT HOME FT</td>
<td>✅</td>
<td>17</td>
<td>✅</td>
<td>✅</td>
<td>726</td>
</tr>
<tr>
<td>INHNDF</td>
<td>Independent NOT AT HOME FT</td>
<td>✅</td>
<td>22</td>
<td>✅</td>
<td>✅</td>
<td>3953</td>
</tr>
<tr>
<td>DJQT</td>
<td>Dependent 3/4 TIME</td>
<td>✅</td>
<td>25</td>
<td>✅</td>
<td>✅</td>
<td>361</td>
</tr>
<tr>
<td>DHT</td>
<td>Dependent 1/2 TIME</td>
<td>✅</td>
<td>37</td>
<td>✅</td>
<td>✅</td>
<td>622</td>
</tr>
<tr>
<td>DLHT</td>
<td>Dependent &lt;1/2 TIME</td>
<td>✅</td>
<td>47</td>
<td>✅</td>
<td>✅</td>
<td>254</td>
</tr>
<tr>
<td>IHQT</td>
<td>Independent AT HOME 3/4 TIME</td>
<td>✅</td>
<td>57</td>
<td>✅</td>
<td>✅</td>
<td>73</td>
</tr>
<tr>
<td>IH</td>
<td>Independent AT HOME 1/2 TIME</td>
<td>✅</td>
<td>67</td>
<td>✅</td>
<td>✅</td>
<td>83</td>
</tr>
<tr>
<td>INLHT</td>
<td>Independent AT HOME &lt;1/2 TIME</td>
<td>✅</td>
<td>77</td>
<td>✅</td>
<td>✅</td>
<td>30</td>
</tr>
<tr>
<td>INH3QT</td>
<td>Independ NOT AT HOME 3/4 TIME</td>
<td>✅</td>
<td>87</td>
<td>✅</td>
<td>✅</td>
<td>360</td>
</tr>
<tr>
<td>INHT</td>
<td>Independ NOT AT HOME 1/2 TIME</td>
<td>✅</td>
<td>97</td>
<td>✅</td>
<td>✅</td>
<td>650</td>
</tr>
<tr>
<td>INNHHT</td>
<td>Independ NOT AT HOME &lt;1/2 TIME</td>
<td>✅</td>
<td>115</td>
<td>✅</td>
<td>✅</td>
<td>224</td>
</tr>
<tr>
<td>DEFA1T</td>
<td>Budget Default Group</td>
<td>✅</td>
<td>200</td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**What it looks like now**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Group Active</th>
<th>Group Priority</th>
<th>Rules Exist</th>
<th>Rules Active</th>
<th>Student Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>Default Budget Group</td>
<td>✅</td>
<td>50</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>DEP</td>
<td>Dependent With Family</td>
<td>✅</td>
<td>10</td>
<td></td>
<td></td>
<td>8853</td>
</tr>
<tr>
<td>IN</td>
<td>Independent With Family</td>
<td>✅</td>
<td>20</td>
<td></td>
<td></td>
<td>963</td>
</tr>
<tr>
<td>INDO</td>
<td>Independent Not With Parents</td>
<td>✅</td>
<td>30</td>
<td></td>
<td></td>
<td>3107</td>
</tr>
</tbody>
</table>

Student Count: Total: 18497 Query: 18497
Hints and Helpful Ideas

- Start off simple
- Set up first and hard-code everything
- Test!
- Write rules later
- Brainstorm every possible scenario
- Re-write rules to work for all of your scenarios
- Move to less hard-coding
- TEST!
Be sure “Period Budgeting Enabled” is checked on default tab of ROAINST

Be sure to assign a “default” budget group on ROAINST
You can manually assign a student a budget from RBAPBUD

You can either lock or freeze via batch post (RORPOST)
  - Lock – Locks the group
  - Freeze- Freeze Group and Components (be careful)

You can use ROAIMMP to assign a student a budget
Re-budget/Repackage

- Identify students whom have not enrolled in Fall (Fall is our header)
- Batch post a new aid period. Example SPR/SUM
- Post month budget duration via RORPOST or set up budget duration on ROBAPRD by aid period
- Run RNPFMxx
- RPEPELL
- RPEPCKG
Resources

https://ecommunities.ellucian.com

Banner FA Release Guide 8.14.1
(Period Based Algorithmic Budgeting Configuration Workbook)

Banner FA Release Guide 8.14.1
(Period Based Algorithmic Budgeting Process Workbook)
Thank you!

Deven Dindyal
Devendra.Dindyal@ncc.edu